

J. B. Bishop

MUNICIPAL
STUDIES

CHICAGO
NORMAL
SCHOOL
DEPARTMENT
OF SOCIOLOGY

No. 1

THE FIGHT FOR LIFE IN
CHICAGO

A SKETCH OF THE SANITARY HISTORY
OF THE CITY; COMPILED LARGELY
FROM OFFICIAL REPORTS



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PREFATORY NOTE.

This sketch has been prepared in the belief that teachers and pupils in the upper grades of our schools will more and more study those municipal activities that are felt to touch their own lives most vitally.

The historical phases of any such study (and they are essential) are hard to follow, because the necessary facts are locked up in official reports covering the whole period of our city life. It is, therefore, hoped that this sketch of our sanitary struggle may be found useful, both for what it contains and for its references to those particular official records that contain the richest material for further study. If this hope is realized, it is the intention to publish other outlines of the history of public works, police, fire, parks, schools, etc.

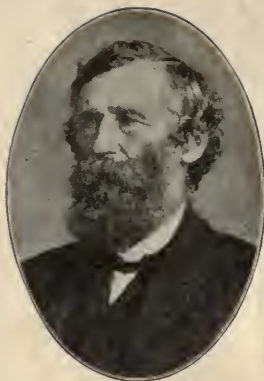
*Annals of Health and Sanitation
in Chicago*

G. KOEHLER, M. D.,

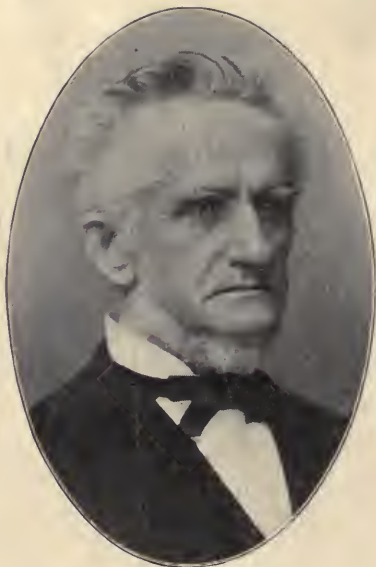
Assistant Commissioner of Health.



DR. JOHN H. RAUCH



E. S. CHESBROUGH



DR. N. S. DAVIS



DR. OSCAR DEWOLF



DR. BROCK. L. MCVICKAR

FIG. CCXII.—Pioneer Workers in Health Conservation and Sanitation in Chicago.

ANNALS OF HEALTH AND SANITATION IN CHICAGO.

1673: *The first prophecy* in regard to the future development of Chicago was made by Joliet who, when he crossed the Chicago portage with Marquette in this year, reported that the place at which they entered the lake was a harbor and has a very important advantage in that it would only be necessary to make a canal by cutting through half a league of prairie to pass from the lake of the Illinois to the river St. Louis. "Then a boat built on Lake Erie could easily sail to the Gulf of Mexico by this route."

1674: *The first history of illness* in Chicago is that of Father Marquette. He reached the river on December 4, and encamped two leagues up the south branch near the portage, where he was obliged to remain all winter on account of a severe illness, apparently occupying the cabins of the two French traders, La Toupine (Pierre Moreau), and a surgeon who were away on a hunting expedition. These soon heard of the newcomer and the surgeon visited him; after that they brought provisions and Marquette says that they "did and said everything that could be expected of them."

The first habitation and business of a white man, according to the foregoing, must have been established in Chicago probably between 1671 and 1674, for in the former year La Toupine was reported to be at Sault Ste. Marie with St. Luson.

1682: La Salle, after visiting the Portage of Chicago in this year, writes disdainfully of Joliet's proposed waterway across the Portage, thus establishing the record of the *first discouragement of public improvements*.

1687: *Too little water in the Chicago river*. Two messengers notify Tonti that three canoes laden with merchandise had arrived at Chicago, that there being too little water in the river they could come no lower. The next spring Tonti was detained in Chicago, the time of rest being advantageous for the healing of his foot.

1700: *Record of first death*, that of Father Julian Bineteu, who preached to the mission at Chicago. He was associated with Father Pinet, who in 1696 established the Mission of the Guardian Angel in this vicinity.

1757: Chicago lost track of for nearly a century, but *said to contain rich mines*. Du Pratz in this year predicts that unless "some

curious person shall go to the north of the Illinois river in search of mines, where they are said to be in great numbers and very rich, that region will not soon come to the knowledge of the French."

1779: Jean Baptiste Point de Saible, a native of San Domingo, located on the site of Chicago in this year. Thus, it has been said that the "first white man in Chicago was a negro."

1780: Battle of South Chicago of the Revolutionary War, fought December 5 of this year "at the Calumet, a few miles southeast of Chicago." Captain Hamelin and *four men killed*.

1795: By the treaty of Greenville the Pottowatomies ceded a tract of land six miles square at the mouth of the Chicago river. With them Chicago *had ever been a favorite resort*.

1796: *Plans for the liquor traffic* laid by William Burnett, a trader from St. Joseph, who wrote to a supply house in Montreal this year as follows: "It is expected that there will be a garrison at Chicago this summer. * * * and as I have a house there already, * * * I will have occasion for a good deal of liquors."

First sale of a house, that of De Saible to Le Mai. This stood at what is now the corner of Pine and Kinzie Streets.

1804—Fort Dearborn Established.

Surgeon Forry, medical statistician of the army, makes the *first sanitary report* on the locality, viz.: "The bank of the lake is several feet higher than the ground in the rear; the latter is sometimes covered with water. Indeed the whole country is so low that in the early settlement ~~boats frequently passed during the spring floods over the prairie to the Des Plaines.~~ This position is one of our most salubrious stations."

1804: *The first permanent white settler*, John Kinzie, arrives. Ellen Marion Kinzie, daughter of John Kinzie, born in December, was the *first child born* of white parents on the soil of Chicago.

1812: Fort Dearborn Massacre, 52 killed, including Dr. Isaac V. Van Vorhees, surgeon at the Fort. The only white man remaining on the site was the French trader, M. du Pin, who, it is said, *was in the habit of supplying medicines* as well as medical advice to those in need of either. To him Waupekee, from the Indian village on the Des Plaines, took the infant captive Mary Lee, a survivor of the massacre, for medical treatment. This is *the first record of any person being taken to Chicago for medical attention*.

1816: The Kinzie family returned to their home in Chicago, and found that the bones of soldiers who had fallen in the massacre were still unburied.

1817: Judge Storrow, who came from Detroit this year, via Mackinac and overland from Green Bay, on arrival at Chicago writes, "*I perceived I was in a better country.*" It had become so by gradual melioration.

1818: Governor Reynolds, in his sketches of the country on the northern route says, "*only two families reside in Chicago.*"

1820: Dr. Alexander Wolcott came to Chicago as an Indian agent of the government and also served as surgeon at the Fort.

Summer unusually hot and dry. "The fevers of that season were unusually rapid, malignant and unmanageable."

1821: Schoolcraft, as secretary of the Commission to make a treaty with the Indians at Chicago on August 14, after crossing the south fork of the Chicago River and emerging from the forest that skirts it, found the large number of Indians who preceded him thronging the level plain that stretches along the lake shore, while the *refreshing and noble spectacle of the lake itself*, with a "vast and sullen swell" appeared beyond.

1822: *First vital statistics.* One death among the 87 men at the garrison. The next year three died out of 95 stationed there.

1823: Major Long, in passing through Chicago, makes the *first report on housing* conditions, viz: "The village presents no cheering prospects * * * it contains but few huts. Their log or bark houses are low, filthy and disgusting, displaying not the least trace of comfort."

First marriage that of Dr. Alexander Wolcott to Ellen M. Kinzie.

Dr. S. G. J. DeCamp appointed assistant surgeon at Fort Dearborn.

Preliminary surveys made by Colonels J. Post and R. Paul for locating the Illinois and Michigan Canal.

It was largely on the advice of Dr. Wolcott that Fort Dearborn was not abolished when the garrison was withdrawn this year.

1827: Bill passed by the legislature for the construction of the Illinois and Michigan canal.

1828: *First frame house* in the city built for Billy Caldwell, the half-breed, at the corner of what is now Chicago Avenue and North State Street.

1829: *First record of morbidity statistics* for Chicago published in reports of the United States Army. Man strength of the garrison, 91. Diseases, viz.: Intermittent Fever, 17; Diseases of Respiratory Organs, 11; of Digestive Organs, 30, etc.

1830: Board of Canal Commissioners appointed, who employed James Thompson to *survey and lay off the town of Chicago*.

Dr. Elijah D. Harmon arrived in Chicago and was installed as surgeon of the garrison, succeeding Dr. J. B. Finley, who was then absent from the post. Fifteen deaths of the troops at the Fort from remittent fever. Man strength, 90.

First official report on health of city made by the Canal Commissioners who, in their report to the legislature this year say: "This town is situated on the Chicago River near its mouth and possesses many advantages. * * * It is the only eligible site for a town on the lake. * * * and from the long experiences of its inhabitants is decidedly healthy."

1831: *Cook County organized*. Population of Chicago about 100. Five marriage licenses issued this year.

In September, 4,000 Indians gathered in Chicago to receive their annuities and the scenes of *debauchery and violence* which occurred are described as being most disgusting and terrible.

1832: On July 10, during the Blackhawk War, Gen. Winfield Scott arrived with his detachment in Chicago on the Steamer Sheldon Thompson (the first steamer to reach the city). The troops came from the East where *cholera* had been prevalent since May, and very soon after landing in Chicago the disease *spread rapidly* among his command, one man out of every three being attacked, and many dying. Dr. Harmon treated the troops and also devoted his attention to the citizens in the little town. The hospital admission rate was 200 per 1,000. Forty-eight died. Dr. DeCamp, the assistant surgeon, inclines to the opinion that the disease was contagious because several citizens of the village also died of cholera. Great influx of people on account of the war scare. Nearly 700 in the city, of whom two-thirds were children.

In this same year Dr. Harmon also amputated the frozen foot of the half-breed Canadian carrying the mail on horseback between Chicago and Green Bay, Wisconsin. This is the *first record of a major surgical operation* in Chicago.

First public building; an estray pen erected on the site of the present City Hall and County buildings. Cost \$20; settled for \$12 because work was *not according to contract*.

First drug store started by Mr. Philo Carpenter.

First cattle slaughtered by John Mark Noble, in Dole's warehouse, at the corner of Michigan Avenue and Madison Street.

Incorporated as a Town.

1833: The general law (Act of 1831) for the incorporation of towns, under which the town of Chicago was organized, gave the president and trustees the following powers relative to health matters:

1. To prevent and remove nuisances.
2. To regulate and establish markets.
3. To sink and keep in repair public wells.

First health ordinance passed which declared it unlawful to "throw or put into the Chicago River, within the limits of the town, any carcass of any dead animal or animals, under a penalty of three dollars for each offense."

The first newspaper, the Chicago Democrat, started. Dr. Daniel Brainard later became associated with the paper as an editor.

Latrobe, visiting the village in the autumn of this year, "found a doctor or two, but not a highly encouraging clientele." The physicians referred to were Dr. E. D. Harmon and probably Dr. Philip Maxwell. The latter had been surgeon to the Fort since March and remained until the post was abandoned in 1836, when he engaged in the practice of medicine in the city.

Dr. Harmon, the *first practitioner of medicine* in Chicago, was now residing in the Kinzie house. His *medical library* is said to have comprised over a hundred volumes. His favorite themes were horticulture and the certain future importance of Chicago. He put his theories into practice and acquired 130 acres of land on the lake shore, south of 16th Street.

Overcrowding. Harriet Martineu, the renowned traveler, visiting the village, says she never saw a busier place than Chicago. All inns were overcrowded with speculators. Her party had to be divided among three families for lodgings.

The first brick building, built on Monroe Street, between State and Clark Streets.

1834: *Fear of cholera impelled the trustees to action.* The supervisor was ordered to abate all nuisances. A temporary Board of Health was established.

A Vigilance Committee was appointed, consisting of Doctors W. B. Egan and J. C. Goodhue and 11 laymen, to inspect all houses and yards and direct the owners to put these in good condition on 24 hours' notice.

As a reminder of the cholera epidemic it is reported that a boatman paddling up the river could perceive the ends of the bark coffins projecting through the sand hills and even occasionally note the exposed contents.

First Sunday closing law passed September 1, provided a fine of \$5.00 and costs for keeping a tippling house or grocery open on the Sabbath, one-half of the fine to go to the complainant! It was the common practice of grocery stores to sell liquors. This continued until 1860-70.

Another report on housing conditions by C. F. Hoffman, who visited the village in January while spending his "Winter in the West." He says: "Four-fifths of the population have come in since last spring and the erecting of new buildings is in proportion. The houses were built with such rapidity as to be mere shells and are hard to keep warm."

First public water supply from a well dug this year at Cass and Michigan Streets. Cost \$95.50.

1835: *A Board of Health*, consisting of seven members, established in pursuance to an act of the legislature passed February 11, 1835, authorizing the trustees to "make regulations to secure the general health of the inhabitants." Members of the Board made inspections of their respective parts of the town for nuisances. It is reported that "the year was a most sickly year for common intermittents."

By an act of the legislature, passed this year, changing the corporate powers of the town of Chicago, the following additional powers relative to health conservation were conferred on the Board of Trustees:

1. To make regulations to secure the general health of the inhabitants.
2. To build market houses.
3. To establish and enforce quarantine laws.

Two cemeteries established and burial in other parts of the town prohibited. The North Side cemetery was located on Chicago Avenue, close to the Lake Shore, and the one on the South Side near 23rd Street and Wabash Avenue.

First courthouse and jail built.

Anson Sweet constructed a *plank sewer* on Dearborn Street from Lake Street to the river, and was censured for the expense incurred.

1836: Work on Illinois and Michigan Canal started (July 4) at Bridgeport, Dr. W. B. Egan delivering the address.

Fort Dearborn permanently evacuated. According to published returns for 10 years the annual rate of intermittent fevers in the garrison was 23 per cent.; of remittents, 4 per cent.

A medical society was organized this year, which apparently met but once.

First homeopathic physician, Dr. David S. Smith, located here this year. Total number of physicians, 12.

The Chicago Hydraulic Company, to supply the city with water, was incorporated by an act of the legislature, but was not organized until several years later.

First drainage ditch. \$396 paid to James Daly for making 132 yards of road and ditch on Clark Street.

J. M. Peck of Illinois, in his "Guide for Immigrants," published this year, devotes an article to the subject of "*Advice to Recent Settlers for the Preservation of Health*." He points out "that it is impossible to prevent the influence of an atmosphere pregnant with the causes of disease." Uniform exposure of the system to the weather, he says, is favorable to health, and states that "it is common for a frontier man whose health is on the decline, and especially when indications of pulmonary affection appear, to engage in a hunting expedition to renovate his health."

City of Chicago Incorporated March 4, 1837.

1837: In accordance with the terms of the charter the *first Board of Health* was constituted as follows:

Mayor William B. Ogden, ex-officio, President.

Dr. J. W. Eldridge, Commissioner.

A. N. Fullerton.

D. Cox.

} Elected by
City Council

I. N. Arnold, City Clerk, ex-officio Clerk of Board of Health.

Dr. D. Brainard was appointed *health officer*.

The first city charter, which was a special act of the legislature incorporating the city of Chicago, vested the following powers in the Board of Health:

1. Ordering boats or vessels moved to a distance not exceeding three miles beyond the city limits within six hours after delivering their cargo, if the Board believes or suspects that such boat or vessel may bring or spread pestilential or infectious diseases.

2. To order all persons in said city, not residents thereof, who shall be infected with infectious or pestilential disease, and all things which they believe to be infected or tainted with pestilential matter, removed to a place not exceeding three miles beyond the bounds of the city.

3. Persons practicing physic were required to report to the clerk of the Board of Health the patient suffering from any malignant or yellow fever, or other infectious or pestilential disease.

The common council was given power to appoint, at their pleasure, a health officer annually, and to remove him at pleasure.

The duty of the health officer was defined by the charter, viz.:

1. To visit every sick person reported to the Board of Health and to report with convenient speed his opinion of the sickness.

2. To inspect, at the request of the president of the Board of Health, all boats landing in the city suspected of having on board pestilential or infectious disease, and all stores or buildings suspected to contain unsound provisions, damaged hides or other articles, and report the state of the same to the clerk of the Board of Health.

The charter gave the common council the following authority in reference to sanitary affairs:

1. To compel the owner or occupant of any grocery, cellar, tallow chandler's shop, soap factory, tannery, stable, barn, privy * * * * or other unwholesome, nauseous house or place, to cleanse, remove or abate the same * * * * as often as may be necessary for the health, comfort and convenience of inhabitants of said city.

2. To direct the location and management of slaughter-houses; to establish and regulate markets; to regulate the sale of fresh meats and vegetables, and to license and regulate butchers.

3. To regulate the time and place of bathing and swimming in canals, rivers, harbors and other waters.

4. To prevent the bringing or depositing or having within the city limits, any dead carcass or other unwholesome substance, and to require the removal or destruction of the same by the owners or by some officer of the city.

5. To abate and remove nuisances.

6. To regulate the burial of the dead.

7. To direct the returning and keeping of the bills of mortality and to impose penalties on physicians, sextons or others for any default.

8. To establish, make and regulate public pumps, wells, cisterns and reservoirs. (The charter gave no power to the city to establish a general system of water-works.)

9. Power to appoint a Board of Health, health officer, sextons and scavengers.

On May 12, the city council passed the *first code of ordinances*. These were printed at the office of the Chicago Democrat in 1837 (*first book published in Chicago—21 pages*). It contained the following sections in reference to health:

1. Poison not to be sold unless marked.

2. Drains not to be obstructed.

3. No dung, dead animal or putrid meats or fish, or decayed vegetables to be deposited in any street, avenue, lane or public square.

4. Owner or occupant of any lot or tenement not to allow nuisance to remain on such lot or between it and the center of the street adjoining the same.

5. Buildings in which meats, etc., are sold to be kept clean.

6. One or more of the members of the Board of Health shall inspect all places in the city where fresh meat or fish are sold at least once a week between April 1 and November 1, and once a month during the remainder of the year.

Division X of the aforesaid Code defined the power of the Board of Health, viz.:

1. To make diligent inquiry in regard to nuisances and order the removal of the same.

2. To order non-residents affected with infectious or pestilential disease, and all things tainted with such pestilential matter, to be removed to a place not exceeding three miles outside of the city limits.

3. Power of entry during the daytime to any building, cellar, lot or ground, to make inspections for sanitary conditions, and to order the removal of all nuisances found.

4. To require all stagnant water to be drained from any lot or out of any street and, if necessary, to carry out such orders at the expense of the owners.

5. To prohibit the use of vats, pits or pools of stationary water, either for tanneries, dyers or other persons, as they may deem dangerous to public health.

6. Every butcher or other person shall immediately after killing any beeves, calves, sheep, etc., destroy the offal, garbage and other offensive and useless parts.

7. No person shall cast, or have exposed, the dead carcass of any animal on any street, alley, lane, yard or lot.

8. Making it the duty of the Board of Health to destroy any putrid or unsound meat, fish, hides or skins.

First census of city, after its incorporation. Population, 4,170. Colored, 77. Under five years, 513. Dwellings, 398. Drug stores, 3.

1838: Laborers employed in the Illinois and Michigan Canal afflicted with a disease resembling cholera, which struck them down very suddenly.

Nearly all who resided along the line of excavation of the canal suffered with autumnal fever and almost all the laborers suffered in the same way.

Lake level the highest on record, being 584.69 feet above the sea level.

1839: Chicago Hydraulic Company organized. Prior to this time the water supply was from wells and water carts distributing lake water.

First daily paper, the "Chicago American," commenced publication.

Dearborn Park established. This was the *first park* and was located on the present site of the Public Library Building.

The municipal court provided for in the charter of 1839 abolished. It is stated that the court had been too prompt and too just to satisfy public opinion at that time.

Ordinance passed providing for the erection and regulation of a market house to be located about the middle of State Street, between Lake and Randolph Streets, at a cost not to exceed \$850.00.

1840: The Hydraulic Company began to *distribute water* through bored logs laid underground. The supply was derived from the lake by means of an iron pipe extending 150 feet out in the lake.

With a pump worked by a 25 horse-power steam engine the water was pumped into a reservoir located at the corner of Lake Street and Michigan Avenue, the tank being 25 feet square and elevated 80 feet above the ground. The laying of a mile or two of bored logs began, these being the *first water mains*.

Population of city according to U. S. census, 4,479.

1841: *First attempt made to gather vital statistics.* The council, in response to a petition by physicians of the city, passed an ordinance requiring attending physicians to give a Certificate of Death, which certificate was to be given to the city sexton before burials were made.

Great temperance revival; 140 signed the pledge.

1842: An ordinance relating to the burial of the dead was passed. The city purchased a piece of land at \$25.00 an acre for cemetery purposes.

First cattle slaughtered for eastern market by Archibald Clybourn and G. S. Hubbard.

First schedule of water rates published.

1843: The *first medical school*, Rush Medical College, gives first course of lectures.

A *city hospital* was built at a cost of \$200.00.

Ordinance passed prohibiting owners to allow hogs to run at large on the streets.

Ordinance passed providing for the health and order of the city, which prohibited the depositing of any dung, dead animal, contents of any privy vault into, or on the banks of, the Chicago River or Lake Michigan and the depositing of such substances or any rubbish on any streets, alleys or gutters.

Death rate 1 to 64.78 of the population, according to the records of the city sexton.

1844: A *severe outbreak of scarlet fever occurred*. Total deaths in city this year were approximately 306, as compared with an estimated number of 129 in the preceding year.

The street commissioner was directed to notify the owner or occupants of stables and alleys to remove the manure therefrom under penalty of prosecution.

First meat packed for foreign market.

First medical journal published, the Illinois Medical and Surgical Journal, Dr. J. V. Z. Blaney, Editor. This, in 1848, became the Northwestern Medical and Surgical Journal, and in 1858, the Chicago Medical Journal.

1845: This year scarlet fever still prevailed and an additional \$300.00 was spent for a hospital building.

First public school building erected, on Madison Street, opposite McVicker's Theater.

Act of legislature passed incorporating the Lake Michigan Hydraulic Company, and empowering the same to supply water on the North Side without any reference to the consent or regulation of the city council. This act was repealed later.

1846: *Scavenger service started.* The city council ordered that owners or occupants of lots, in what was then the business section of the city, be required to collect into heaps in front of their houses every Saturday morning, vegetables and other matter liable to decomposition, and that the street commissioner provide scavengers to remove the same.

Dr. W. B. Herrick appointed surgeon to the First Regiment of Illinois Volunteers in the Mexican War. In a letter to the local medical journal he wrote from Mexico, "Of all the diseases to which volunteers have been subject, those of the lungs, consequent upon measles, have been most destructive of life."

Free dispensary opened.

July of this year was very hot.

1847: By act of the legislature the city was given power to make, maintain and repair all sewers in the city, said sewers to be the property of the city.

First year during which records of deaths kept by the city sexton are extant. Total number recorded 520.

Board of Health declared soap and candle factory of Charles Cleaver a nuisance, resulting in the removal of the establishment to Cleaverville in 1851.

Chicago datum established, based on the low water level of Lake Michigan this year, which was 579.94 feet above sea level.

First general hospital started in city at North Water and Dearborn Streets. Known as Tippecanoe Hall. J. W. Freer *first interne*.

Rush Medical College Dispensary adopted as a county institution by the county commissioners.

First state hospital for the insane established by a bill passed this year. To be erected within four miles of Jacksonville.

Dr. E. Mead opened a private hospital for the insane (The Chicago Retreat for the Insane).

1848: Illinois and Michigan Canal completed, with summit level eight feet above low lake level.

Total cost of canal \$6,537,254. Pumps at Bridgeport put into operation feeding the canal from the Chicago River.

Dr. H. S. Huber was appointed city physician "without salary."

The first smallpox scare. Handbills were distributed, giving the names of physicians willing to vaccinate those unable to pay and calling upon all persons not vaccinated to be vaccinated without delay.

A committee from the Mechanics Institute submitted plans for a new system of water supply.

First municipal market established on State Street between Randolph and Lake Streets. This also served as the *first city hall*.

Ten thousand dollars appropriated by Congress for a Marine Hospital at Chicago.

1849: In anticipation of cholera, which was then raging in the south, a public meeting was held, at which resolutions were passed demanding the cleansing of the city. On March 10, these were presented to the city council by Dr. B. McVickar, chairman of the committee. Between April 2 and 23, forty-five assistant health officers were appointed.

On April 29 *cholera was brought to the city* in the emigrant boat John Drew. The deaths from cholera during the year were 678, or one in 36 of the entire population. Between July 25 and August 28, 1,000 cases and 314 deaths occurred. The outbreak lasted until late in October. The families using hydrant water brought in from Lake Michigan suffered less than those using well water. One hundred barrels of lime scattered on the streets.

A very complete report on the cholera outbreak in Chicago was published by Dr. John Evans in the Northwestern Medical and Surgical Journal. He states that the first recognized case of the disease in Chicago was the captain of the canal boat John Drew, which came to the city on April 29, with passengers from New Orleans. The disease was then prevalent in the Mississippi Valley. During March and April the disease had appeared in various cities on the Illinois River.

First stock yards (The Bull's Head Yards) started by John B. Sherman at Madison Street and Ogden Avenue.

Dr. Levi D. Boone appointed city physician. He had been alderman three terms.

A crude system of drainage, patterned after the New Orleans system, was introduced, but it proved a failure.

Dr. Daniel Drake said that "the town plot is constantly becoming dryer and firmer, and that by a judicious system of ditching, as the population increases, no doubt much of the town plot can be entirely reclaimed."

Chicago Protestant and St. Joseph's Orphan Asylums chartered.

Great flood in the south branch of the Chicago River, coming from the Des Plaines via Mud Lake.

Ordinance passed prohibiting the driving or swimming of any

horses, or washing of any vehicles in the lake adjacent to the hydraulic works at Lake Street.

1850: *Cholera appeared again in July.* From July 18 to August 21, four hundred sixteen persons succumbed to the disease. Four more deaths in September.

Sewerage system was primitive and in many streets there were only gutters, serving as drains. In the business section the sewers were made of heavy oak plank, triangular in shape and placed in the center of the street. The streets were planked; the gutters often clogged up, leaving pools of foul liquid in the street.

Chicago Hydraulic Company supplied one-fifth of the city with water. Had $9\frac{1}{4}$ miles of mains in operation.

Chicago Medical Society organized; Dr. Levi D. Boone first president. Illinois State Medical Society organized. Dr. William B. Her- rick of Chicago the first president.

First private hospital opened, the Illinois General Hospital of the Lakes, at the corner of Rush and North Water Streets. During its first year it was aided by a course of public lectures given by Dr. N. S. Davis on the sanitary conditions of the city and the means of its improvement. "These lectures pointed out the chief sources of disease and demonstrated the necessity and practicability of a system of sewers and full supply of pure water in such a manner as attracted the attention of many of the leading citizens." From the tickets sold for the course the sum of \$100.00 was realized.

Heavy box sewers laid in the territory between State Street and Fifth Avenue, from Randolph Street and the River, at a cost of \$2,871.90, raised by special assessment. The attempt proved futile because when most needed they were below the level of the water in the river. The planks in the gutters became mud-covered and so unbearable that the application of quick lime had to be resorted to.

Catholic Orphan Asylum started by Bishop Van de Velde on Wabash Avenue, near Van Buren Street.

Illuminating gas was used the first time this year for street and residential lighting.

First exclusive plumbing shop established by Alexander Raffin. Census shows a population of 28,269.

1851: *The new city charter granted* by the legislature this year gave the city council the following additional powers in regard to health protection:

1. To make regulations to prevent the introduction of contagious diseases into the city.

2. To make quarantine laws and enforce the same in the city and within fifteen miles beyond the city limits.

3. To regulate the registration of births and deaths and direct the returning and keeping of bills of mortality.

4. To do all acts and make all regulations which may be necessary or expedient for the preservation of health and the suppression of disease.

5. To prescribe the powers and duties of the Board of Health.

6. To abate nuisances and assess the expense of the same against the real estate chargeable therewith, and also to make such expense collectable by suit for money expended.

7. To regulate and direct the location of breweries, tanneries and packing houses * * * and prohibit, within the city and the distance of four miles therefrom, distilleries, slaughter-houses, establishments for the steaming and rendering of lard, tallow and offal, and all establishments where any nauseous or offensive business is carried on, provided that the Chicago River with all its branches to their sources and land 100 rods adjacent thereto, shall be within the jurisdiction of the city for the purposes of this section.

8. To regulate the inspection of flour, meal, pork, beef, fish, salt and other provisions sold in barrels or other packages.

9. To prevent any use of the harbor detrimental to the public health or calculated to render the water of the same impure or offensive.

10. To erect and establish hospitals and dispensaries, and control and regulate the same.

11. To fill up, drain, alter, cleanse, repair and regulate any grounds, cellars, private drains, sinks and privies; direct and regulate their construction and cause such expenses to be assessed against the property.

The charter provided for a Board of Health consisting of three or more commissioners to be appointed annually by the council. The duties of the Board of Health and health officers, remained practically the same as defined in the first charter.

A revised and more comprehensive code of ordinances was passed by the city council this year. This code defined the Board of Health and its powers and duties, viz.:

1. To consist of three or more competent and judicious citizens, appointed by the council, who, with the mayor, shall constitute the Board of Health. To hold office for one year.

2. Board given power to appoint a city physician and "officers of the Board of Health" (health officer and ex-officio health officers appointed by council according to the charter) with the same powers as health officers.

3. May take measures deemed necessary to prevent the spread of smallpox and other pestilential diseases by issuing an order requiring all persons to be vaccinated, provided that the Board shall provide vaccination for persons unable to pay for the same.

4. Power to abate such nuisances as are specified in the Health ordinances of the city.

5. When the Board deems it necessary that a system of quarantine shall be instituted, they shall report the necessity thereof, together with a plan of ordinance to the city council.

The duties of the health officer were defined, as follows:

To execute the orders of the Board of Health; make sanitary examinations of the city; serve notices to abate nuisances; visit vessels suspected of bringing disease, quarantine the same; to visit persons suspected of

laboring under infection; cause them to be removed to hospitals; post notices of smallpox on houses where it exists; cause hospitals to be supplied with nurses and medicines; notify the Board of Health when necessary to hold special meetings.

The health officer was allowed \$50.00 per month from April to September, inclusive, to defray the current expenses of the Health Department.

The city physician was charged with the following duties:

General sanitary supervision over city; to report outbreaks of contagious disease to the Board of Health; to keep vaccine on hand, and see that all persons are vaccinated; to superintend the smallpox, cholera, and other city hospitals, and to administer to all patients conveyed there who have no other physician; to examine vessels at the request of the Board of Health, mayor or council.

For his services he was allowed a general fee to be fixed by the Board of Health.

Ordinance passed August 15, provided that notice to abate nuisances need not specify manner of abating; that expense of abating shall be reported to the council so that they may be assessed against the property, the same as sidewalks.

Ordinance passed regulating slaughter-houses, and the steaming of lard and tallow, and requiring a permit from the council for using any building for this purpose. Applicant to give a bond of from \$100.00 to \$5,000.00 conditioned that he will obey the ordinances and pay all penalties. Health officer to visit such plants daily during the packing season.

This ordinance provided that no offal, blood or offensive matter should be allowed to fall on the ground or to flow in the Chicago River or be kept on the premises longer than 48 hours, and required that the same should be buried at least 20 rods from the river or deposited in Lake Michigan beyond the corporate limits of the city.

Ordinance passed providing for the appointment of one or more scavengers in each division of the city, to be provided with a horse and wagon, the property of the city, who shall pass through the part of the city to be designated by the mayor or city council at least twice a week between April 1 and November 1, to carry away garbage and offal; the street commissioners to print notices designating days on which collections will be made.

Ordinance passed in regard to parks, designating that the public ground east of Michigan Avenue and south of Randolph Street be known as Lake Park.

Committee on Mortality and Hygiene of the Chicago Medical Society made a report on mortality rates in Chicago from 1846 to 1850. In 1850 the mortality rate was 1 to 21.45 of population.

The present system of water supply inaugurated by an act of the legislature incorporating the Chicago City Hydraulic Company and providing for a Board of Water Commissioners.

Board of Water Commissioners, provided for in the new charter, went into office.

Water commissioners made *an enumeration of buildings* with the following result:

North division	1,550
West division	1,506
South division	2,742
Total in city	5,798

Construction of water-works at Chicago Avenue was commenced. In recommending the site Chief Engineer William J. McAlpine said: "It is very questionable whether the small quantity of water which is discharged from the river would affect the quality of the water in the lake at a point one and one-half miles south." (North).

Corner-stone laid for first City Hall and Court House by Dr. J. V. Z. Blaney.

Another smallpox scare and the city physician ordered to vaccinate at city's expense.

Slaughter-house inspectors appointed.

Boat inspection for cholera cases inaugurated. Two hundred sixteen deaths from *cholera* during the year.

First official mortality record, but for a few years it is still inaccurate because burials outside of the city were not recorded, the record still being kept by the city sexton.

Bridewell founded, located at Polk Street and Fifth Avenue.

The Illinois General Hospital of the Lakes became Mercy Hospital. At this hospital Cook County charity patients were cared for until 1863.

1852: *More Asiatic cholera*, causing 630 deaths. On the night of October 13 there were sudden attacks of cholera in every ward of the city and yet there had been very little of the disease previously. A shanty hospital for cholera cases was ordered built on the beach in the north division. Again families using hydrant water suffered less from the disease than those using well water. Smallpox was prevalent.

Cholera deaths from 1849 to 1852, inclusive, numbered 1944, or one death in each 64 of the population for the four years.

City physician's salary fixed by ordinance at \$500. This ordinance provided that he vaccinate the children in the public schools.

Cook County Drainage Commission incorporated by act of the legislature. Empowered to *make local improvements*, such as constructing and maintaining ditches, embankments, culverts, bridges and roads in townships in the Chicago area, and to assess the cost of such improvements on the property.

Lake front lost. Illinois Central Railroad received permission

from the legislature to lay its tracks along the lake shore. Ordinance passed granting to the Illinois Central Railroad the right to lay and maintain its tracks along the margin of the lake from the southern limits of the city and across the open space known as Lake Park to Randolph Street.

First iron water pipe laid. In Clark Street; 4 inches in diameter.

Calumet Feeder for Canal deepened to a uniform depth of four feet.

U. S. Marine Hospital opened. Located on Michigan Avenue on the Fort Dearborn tract. Dr. W. B. Herrick in charge. Twenty of the 64 patients admitted during the first three months were cases of remittent and intermittent fever.

1853: Dr. Brock McVickar appointed city physician. Lot purchased for city hospital and a temporary hospital built. Pest house moved further away from populated portion of the city. *Smallpox more prevalent.*

American Medical Association appointed a committee to study epidemics in the central states. Dr. John Evans appointed to furnish reports for Illinois.

City Hall and County Buildings *at present location first occupied.*

Union Park laid out this year.

State law passed requiring druggists and others to label medicines sold at retail.

Temperature in the three summer months considerably above the mean.

Ordinance passed providing for fish inspection on a fee basis.

1854: Ordinance passed providing for a *system of quarantine* for cholera and smallpox cases. The number of deaths was greater than in any previous year, due mainly to the prevalence of smallpox from which there occurred 1,424 deaths. City council authorized establishment of a cholera hospital at 18th and Arnold Streets.

Chicago Avenue Water Works put into operation, in February. It consisted of one reservoir with a capacity of about half a million gallons and eight and three-quarters miles of iron pipes. The water was obtained from the lake through a 30-inch wooden pipe extending about 600 feet out into the lake to a wooden crib, and conveyed to a pump well under the engine house. The engine pumped the water into the mains and into the reservoir in the south division, located at Adams and Clark Streets.

Two more water reservoirs built, one at Chicago Avenue and Sedgwick Street; the other at Morgan and Monroe Streets.

Water pipes and taps first installed in buildings.

Population at this time about 70,000.

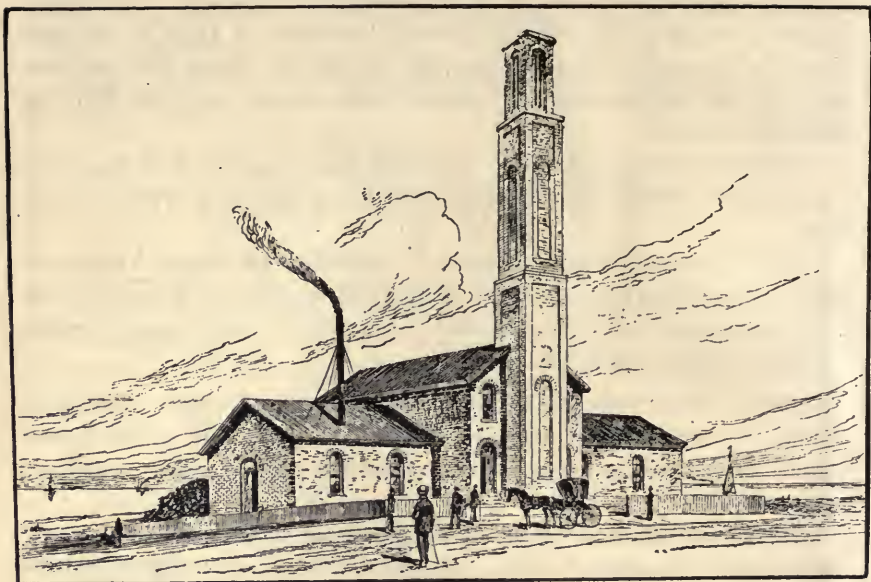


FIG. CCXIII.—First Water Works Built on the Present Site of the Chicago Avenue Pumping Station. Completed in February, 1854.

Dr. N. S. Davis, as chairman of the Committee on Epidemics and Sanitary Conditions of Chicago of the Cook County Medical Society, began the publication of the series of reports on the health of the city. These were continued for two years.

There were 1,571 deaths from cholera during the epidemics of 1854 to 1855, or 1 in 92 of the population during the two years.

1855: Smallpox more prevalent, causing 30 deaths. Physicians neglected to report cases. *First use of quarantine placard*, which was placed on houses where cases of smallpox were found. Deaths from cholera numbered 147.

City dispensary established. Suitable office procured for the Health Department, which heretofore used the city clerk's or mayor's office.

Ordinance passed licensing and controlling night soil scavengers. Dr. Lévi D. Boone elected mayor.

Board of Sewerage Commissioners created by act of the legislature. E. S. Chesbrough appointed chief engineer. Surveys made and plans of a sewerage system drawn. From the outset Mr. Chesbrough insisted that the sewers should discharge by gravity. This necessitated the raising of all the streets.

E. S. Chesbrough presented a plan for purifying the Chicago River by the introduction of water from the lake so as to produce a flushing effect similar to that created by rainfall.

PLIV.

PLAN
SEWING SEWERS LAID
 UNDER THE
CHICAGO SEWERAGE COMMISSIONERS
TO THE END OF
1857.

Main Sewers
 Sub Main do
 Pipe do
 Men. Water do
 Catch Basins

Extent of Work under Sewers



FIG. CCXIV.—Plan of the Original Sewer System of Chicago. Prepared by E. S. Chesbrough.

City directory lists nine plumbing firms.

At the close of the year the water-works supplied 50,000 inhabitants and had 42 miles of pipe in use.

1856: General health of city much better. No deaths from cholera. Typhoid fever on the increase; very prevalent in September.

The *first sewers* were constructed this year and \$100,000 of bonds issued to cover the cost.

Two hundred fifty-six house drains laid. Grade raised and the streets and lots in downtown section filled in from four to seven feet. Court action to enjoin this movement overruled by Judge Caton.

E. S. Chesbrough sent to Europe to study sewer systems.

City Hospital demolished and reconstructed of stone at a cost of \$75,000.

Plans made to locate a smallpox hospital on the north beach at the present site of Lincoln Park.

Board of Water Commissioners established a schedule of water rates.

1857: *New city hospital completed.* The medical staff appointed failed to organize, owing to its composition of Allopaths and Homeopaths. *Board of Health goes out of existence* on account of the absence of cholera or other alarming epidemics, and probably also on account of the controversy over the hospital staff.

Highest annual mortality from malaria since the records began in 1856. Rate, 5.36 per 10,000. Since then the disease has gradually declined, disappearing almost entirely as a cause of death in 1902.

A plan was presented to and approved by the Board of Health for a bath house on the lake shore near the breakwater. The matter was recommended to the city council but not acted upon.

Chicago Homeopathic Medical Society organized.

Chicago Relief and Aid Society organized.

1858: Scarlet fever still prevalent and dysentery very prevalent in children during the summer months. Dr. N. S. Davis protests against the imperfect manner in which deaths are registered.

Meat first packed in the summertime; by Tobey, Booth & Co. and Van Brunt and Watrous.

City hospital leased to private physicians.

Illinois Charitable Eye and Ear Infirmary founded.

Young Men's Christian Association organized.

Highest annual death rate from tuberculosis in the history of the city. Rate, 39.22 per 10,000.

1859: Scarlet fever still prevailed and the mortality from it was greater than from any other disease.

First street car line opened (on State Street).

Dr. Rauch read paper before the Chicago Historical Society on danger of intramural interments. This led to the movement resulting in establishment of Lincoln Park.

Ordinance passed reserving the north 60 acres of the city cemetery on the North Side as a public park. This was the beginning of Lincoln Park.

Chicago Medical College started.

City Hospital leased to private physicians and city patients cared for at the rate of \$3.00 per week.

Chicago Home for the Friendless and the House of the Good Shepherd established.

Board of Health Abolished.

1860: The city council by an ordinance *abolished the Board of Health* and also the offices of health officer and city physician on account of the existing financial depression and the absence of any alarming conditions.

The street commissioner was charged with the duties heretofore performed by the health officer.

Raising of grade completed.

First Homeopathic Medical School, Hahnemann Medical College, started.

Chicago Nursery and Half-Orphan Asylum established.

U. S. Census 109,263.

Consumption of water 4,703,524 gallons as compared with 2,991,412 gallons in 1858.

1861: Camp Douglas established. Thirty thousand soldiers were mustered into service here. Dr. Edmund Andrews, post surgeon; Dr. Brock L. McVickar, assistant post surgeon.

Board of Police and Board of Public Works created by act of legislature, each consisting of three members to be elected, one from each of the three divisions of the city. The Board of Police was charged, among other things with (a) guarding the public health; (b) removing nuisances existing in public streets, roads, places and highways, and (c) enforcing all health ordinances passed.

1862: *Policeman* Charles S. Perry appointed as acting health officer.

Diphtheria became more common and smallpox became epidemic. The typhoid and scarlet fever death rates also increased during the year and there was a marked increase in the deaths from all causes.

Dr. N. S. Davis called attention to the dangers which threatened the city on account of the neglect of sanitary conditions and said; "I

know of no city, except Chicago, with a population of 110,000, that has neither a health officer, a board of health, or any other official sanitary organization."

February 10. The drinking water for several days had a distinct taste and odor of the river.

The unsatisfactory condition of the water supply was made the subject of two resolutions by the city council.

This year *the pumps at Bridgeport were started* to pump sewage from the South Chicago River into the canal.

The city hospital at 18th and Arnold Streets opened as an army hospital under charge of Dr. Brock L. McVickar.

Camp Douglas became a military prison, receiving 33,000 prisoners in all during its existence.

1863: *Sanitary condition of the city became worse.* Along the south branch of the river were many packing houses where over a 100,000 animals were slaughtered every year. The offal and filth from these were discharged into the ditches and waterways flowing into the river, and accumulated as semi-solid masses of putrefaction in the sloughs, and the solid refuse was deposited in the fields beyond. During the summer the odor from this was abominable.

Nine hundred forty-seven cases of smallpox occurred and the deaths from nearly all diseases were in excess of those of previous years. The condition of the pest house was made a subject of inquiry by the Chicago Medical Society. Frightful mortality among prisoners at Camp Douglas.

County Hospital established in the town of Jefferson.

Police board still in charge of sanitary matters.

The city charter, as amended this year, defined more fully the powers and duties of the Police Board, acting as a board of health, and assigned to it powers previously exercised by the Board of Health.

This charter also conferred on the city council power to summarily abate a nuisance and assess the same against the real estate chargeable therewith, and described the manner of making the assesement, the same as for public improvements.

1864: *The mortality from smallpox was fearful.* There were 1,233 cases reported and 283 deaths resulted. Hospital facilities inadequate. Erysipelas was very prevalent, especially among the stock-yards workers.

E. S. Chesbrough presented a report on the engineering work necessary to purify the river. Work on Chicago Avenue Water tunnel begun in March.

The whole city tract on the North Shore was set aside for park

purposes, including the site of the old cemetery. In the next year the tract was named Lincoln Park.

Chicago Dental Society organized.

1865: Act passed by legislature requiring dead animals to be removed within 24 hours to a place at least four miles outside the city limits and prohibiting such animals to be rendered within the aforesaid zone. The act also contained the following additional provisions:

Requiring rendering plants for lard, tallow, etc., within the city to be equipped with condensers and other machinery to prevent nuisance.

Requiring tenements to be provided with drains to carry off waste water and with suitable privy vaults, the contents of which shall not accumulate within 12 inches of the surface.

Requiring the board of police commissioners to appoint a health officer and detail a sufficient number of police to assist him.

Making it the duty of the state's attorney to prosecute for violation of this law.

The condition of the Chicago River was made the subject of a comprehensive investigation by a commission of engineers, which recommended that the summit level of the canal be lowered so as to create a continuous flow of water from the lake and that pollution be kept out of the North Branch.

An amendment to the charter gave the Board of Public Works power to execute a plan for cleansing the Chicago River and designated Roswell B. Mason and William Gooding additional members of the board to act with the other members to carry out this work.

Board of Trade appointed a committee to confer with the city council in reference to the *measures necessary to purify the Chicago River*. The citizens held a mass meeting and appointed a committee of 30 to secure action and proper laws. Public opinion was aroused and much feeling was created on behalf of the different propositions presented. One of the results of this movement was the enactment of a state law defining the duties of the Board of Police, as a board of health, and authorizing the appointment of a health officer.

Deepening of canal agreed upon.

Dr. T. B. Bridges, elected health officer.

The cholera was said to be on its way to the city. As a result of a communication from a committee appointed at a public meeting of the medical profession to recommend measures to improve the sanitary conditions of the city, and the measures necessary to improve the same to prevent an epidemic of cholera, Dr. N. S. Davis was invited to address the council on the subject of sanitary reform.

Union stockyards opened at present location.

Day scavenger system inaugurated under the Board of Police Commissioners.

Mary Thompson Hospital for Women and Children founded. Location, Rush and Indiana Streets.

1866: A year of much belated sanitary activity, but nevertheless *cholera visited the city* and 1,581 persons contracted the disease, of whom 990 died. The health officer was given 32 temporary assistants. The disposal of night soil and garbage was looked after and 11,337 complaints of nuisances were registered. One thousand men were hired and an effort made to clean the city in a week.

Ordinance passed prohibiting burial within the city limits.

The great fatality from cholera stimulated the citizens interested in sanitary reform to action. The health organizations of Philadelphia, New York and Boston were investigated and the satisfactory manner in which the Metropolitan Health Board of New York City had prevented the spread of cholera in that city was noted.

At a meeting of citizens a committee was appointed consisting of Elliott Anthony, A. C. Coventry, Dr. J. V. Z. Blaney, and Dr. John H. Rauch to prepare a bill to be enacted by the legislature embodying the main features of the Metropolitan Health Bill.

Ordinance passed controlling and licensing night soil and offal scavengers.

Cook County Hospital moved from Jefferson to the old city hospital at 18th and Arnold Streets, largely through the efforts of Dr. George K. Amerman. B. F. Chase was appointed first warden; Nils B. Quailes first interne. The city hospital taken over was started during the cholera outbreak in 1855, leased to private physicians in 1858, and confiscated by the government for military purposes in 1863.

Highest annual mortality rate in the history of the city, 32.55 per 1,000. Deaths under five years greater than all others.

Appropriations for the Board of Health, \$71,890.00, including \$37,440.00 for scavenger service and \$25,000.00 for special sanitary expense.

Board of Health Reestablished.

1867: An act of the legislature passed this year provided that the mayor and six other persons to be appointed by the judges of the Superior Court, three of whom shall be physicians, shall constitute the Board of Health; these to hold office for six years; two to be appointed annually. The board was given power to enact by-laws and regulations. Salary of board members, \$500.00. President elected annually from the members. The law also provided for the appointment of a sanitary superintendent by the board, at a salary of \$2,500.

Fine for violating by-laws of the Board of Health ordinances of the city, \$5.00 to \$500.00, in addition to existing penalties.

Board given unlimited powers to act in case of an epidemic.

New Board of Health appointed, Dr. Homer A. Johnson, president. The board was organized by the formation of three standing committees, viz.: Sanitation, Finance and Ordinances.

Dr. J. H. Rauch was appointed *sanitary superintendent*, and 16 medical men as sanitary inspectors. City divided into districts and a thorough sanitary survey made. This investigation inaugurated the inspection and control of housing conditions in the city. Publicity was sought to secure co-operation of the citizens, by giving notice in the papers of the methods and purposes of the survey. A circular was issued in English and German, giving a list of efficient disinfectants and methods of using the same. Many reports of a more technical nature were read and published by the sanitary superintendent.

With the appointment of the Board of Health this year, real efficiency was for the first time shown in sanitary administration.

Ordinance passed making it illegal for anyone except scavengers under contract with the city to remove garbage.

Ordinance passed providing that no child be received or retained in the public schools who has not been vaccinated.

Ordinance passed providing that no privy vault be constructed or cleaned without a permit.

One thousand deaths from cholera occurred in the epidemic of 1866-67, or an average of one death to 425 of the population.

First water tunnel completed, supplying the Chicago Avenue Pumping Station. Inside diameter five feet; extending two miles into the lake.

Smallpox increased. Nine hundred sixty-eight cases and 123 deaths from the disease during the year. Vigorous efforts made to vaccinate. Vaccination and inspection extended to the public schools.

Condition of meat supply investigated and it was ascertained that seven per cent. was unfit for use and three per cent. diseased.

U. S. Marine Hospital built on ten-acre tract in Lake View.

1868: Much improvement in the registration of deaths. Smallpox outbreak continued during first four months. There were 1,286 cases and 150 deaths from the disease. Sanitary survey completed in April. *System of meat inspection inaugurated* at the stockyards. Texas fever noted among cattle at the Union Stockyards and was made the subject of a special investigation by Dr. Rauch.

Dr. Rauch read a paper before the Academy of Sciences on Public Parks, Their Effects upon the Moral, Physical and Sanitary Conditions of Inhabitants in Large Cities.

Bennett Medical College, *the first eclectic medical school*, gives first course of lectures. Dr. Labon S. Major, one of the pioneer physicians of the eclectic school in Chicago, one of the founders.

Drs. N. Senn and W. S. Quine, internes at Cook County Hospital.

Report on the control of prostitution by Edmund Andrews finds that the proportion of prostitutes to population is about 24 per cent. greater in cities which adopt the license system. Proportion of prostitutes to population in Chicago, 1 to 230. Venereal disease cases in Chicago 580 to 4,147 of all other diseases treated in civil hospitals. Recommended that those who have the disease should pay their own doctors to be cured and that after that experience will show what other steps should be taken.

Ordinance passed requiring *plumbers to be licensed* and to take out permits for work to be done.

The sanitary committee of the Board of Health made a report on the Healy Slough located at Deering, Main, Quarry and Lyman Streets and Archer Avenue and ordered the nuisance therefrom abated. The death rate in the vicinity was found to be 1 in 40.

Report on Geologic Survey of Cook County by H. M. Bannister published.

Very hot weather in July.

1869: First attention given to the *inspection of milk*, 121 specimens being examined.

Relation of diseases to drainage and sewage studied; 26.13 miles of sewers constructed, making a total of 136.4 for the city to date.

Another investigation of condition of river, which was getting worse from year to year. Dr. Rauch concludes that the river is most offensive when the lake level is high, and that the condition of the river is largely dependent upon the amount of rainfall. He predicts that the slip being dug from the Union Stockyards to the south branch will become foul unless means for flushing it are provided.

Large main under the river broken by a ship dragging her anchor, and the West Side was without water for three days.

By act of legislature the North, South and West Chicago Parks systems were created.

New water pumping station and tower at Chicago Avenue completed. (It was damaged by fire in 1871, and restored.)

1870: *U. S. Weather Bureau observation station established in Chicago*. Meteorologic records extant as far back as 1830, but are unofficial. These were collected by Hazen from various sources.

High mortality among children: There were 916 deaths from cholera infantum. Sixty-two and eight-tenths per cent. of all deaths were in children under five years.

First milk ordinance passed. This made it unlawful to sell skim milk without stating the character of the same.

Report to the city council by the sanitary superintendent calling attention to the increased number of railroad accidents (34 in 1869) and suggested that the railroads be required to build viaducts over the principal streets which they cross.

First small parks established, viz: Jefferson, Ellis and Vernon Parks, and Washington Square.

Operation of pump at Bridgeport discontinued, and pump sold three years later.

Women's Hospital Medical College founded.

Appropriation for Board of Health, \$52,068.00, including \$19,243.00 for scavenger service.

Population according to U. S. Census, 298,977.

1871: Summer characterized by a period of prolonged and severe draught. *October 8-9, Chicago Fire.* Chicago Avenue Water-works burned at 3:20 A. M., October 9. Eighteen thousand buildings destroyed; 93,000 persons homeless; 107 deaths. The old Lake Hospital, used for smallpox cases, also destroyed. Relief and Aid Society given charge of relief work. Expended \$4,415,454, giving aid to 23,054 families. Dr. Rauch in charge of health work. All officers of the Health Department were made special policemen during the emergency.

City council passed an ordinance, fixing price of bread at eight cents. Saloons closed at 9 P. M.

Records of Health Department lost in the fire, including all records of births and deaths.

Month following the fire was one of high mortality. Much crowding in barracks. Smallpox appeared. The old cholera hospital, at 33rd Street and Wentworth Avenue, was used temporarily for the reception of cases. Sixty-three thousand vaccinated, which action doubtless prevented an epidemic.

A sanitary history of Chicago, from 1833 to 1870, by Dr. John H. Rauch, published with the annual reports of the Board of Health, issued this year but nearly all the copies were destroyed in the Great Fire.

Dr. N. S. Davis made a report on correspondence with state medical societies concerning the means of elevating the standard of medical education.

Deepening of canal completed at a cost of \$3,300,883. Quite a strong current created and a favorable effect upon the river was noted, but it was soon found that this was insufficient.

Chicago Foundling Home opened.

1872: Annual death rate reached 27.64, an increase of 32.6 per cent. over the previous year, as a result of conditions following the

Great Fire. There were 2,382 cases of smallpox. Second highest death rate from all causes recorded this year, 27.64 per 1,000. Great fatality among children under five years, which continued for two years. Highest on record.

Ordinance passed authorizing the sanitary superintendent to remove smallpox cases to the hospital by forcible measures.

The erection of new distilleries, slaughter-houses and rendering plants prohibited between Fullerton Avenue, 31st Street and Western Avenue. Existing rendering plants in this territory prohibited to operate between April 1 and October 1.

Required that no more than three head of cattle shall be kept on one lot or stable without a permit from the Board of Health.

Epizootic among horses arrived in city. First started in Canada and worked its way west. Eleven hundred fifty horses died of the disease in the city.

American Public Health Association organized. Dr. John H. Rauch, treasurer.

Construction of water-works at Blue Island and Ashland Avenues begun.

December marked by a period of very prolonged cold. December 24 the coldest day on record. Temperature, 23°F. below zero.

Ogden-Wentworth Canal completed by private undertaking for the purpose of draining Mud Lake. Thus a communication was established with the Des Plaines and the west fork of the Chicago River. This had the effect of supplying the west fork with water from this new drainage ditch instead of from the Chicago River, and tended to lessen the current in the latter.

1873: *First building ordinance* of consequence was passed. Building control placed under the Fire Department.

Cholera appeared again, causing 48 deaths in the city limits or one to every 7,916 of the population. Most of the cases occurred south of 37th and west of State Street. The water used in this territory was supplied from shallow wells, the city water system extending only as far south as 39th Street. Chicago Society of Physicians appointed a committee to investigate the history and nature of the disease then prevailing in the Bridgeport district and Dr. I. N. Danforth made microscopic examinations of lesions, which was the first use of the microscope in the study of the disease in the United States during the 1873 outbreak.

Smallpox still prevalent; 1,766 cases reported.

Dr. Rauch resigned as sanitary superintendent on August 5 and was succeeded by Dr. Ben S. Miller.

1874: *New smallpox hospital*, located on the grounds of the House of Correction at 26th Street and California Avenue, completed. This was used as a smallpox hospital during the next 20 years.

Much nuisance from slaughter-houses and Board of Health passed regulation that all should put in apparatus to consume the gases from rendering tanks. Tobey and Booth Slaughter-House, at 18th Street and the river, is particularly mentioned in this connection on account of its location near the residential district. The south branch a stagnant pool of abomination.

Distilleries, of which there were seven in the city, came under the notice of the health officer, on account of the slop-feeding of 4,372 cattle in the city.

Births registered numbered 9,794.

Second tunnel to the crib built at Chicago Avenue. Land tunnel extended to Ashland Avenue and 22nd Street.

Law enacted by the legislature prohibiting the licensing of houses of ill-fame and making it unlawful for any Board of Health or employee thereof to interfere in the management of any house of ill-fame, or to provide in any manner for the medical inspection or examination of the inmates thereof.

1875: By a referendum vote the city adopted the *Cities and Villages Act* in lieu of the charter then in force. This act provided for the appointment of a Board of Health and also gave the city council the power, by a two-thirds vote, to create offices, and the mayor, with the advice and consent of the city council, to appoint such officers for a period not exceeding two years.

Large amount of milk in city, especially in the west division obtained from cows fed on brewery slops. This milk sold for half the price of country milk. Mortality of infants in the aforesaid sections of the city was four-fifths of the aggregate of all ages.

Vaccination continued vigorously, especially in the schools. Only 15 cases of smallpox reported.

There were 239 suits brought for violation of health ordinances. Long list of food condemnations listed.

The esprit de corps of the 28 men on the sanitary squad complained of by health officer. They were appointed by the mayor and not subject to discharge by the Board of Health.

Cook County Hospital moved to present location.

Coldest year on record. Accumulated deficiency in temperature, 1,231 degrees Fahrenheit.

Department of Health Established.

1876: *Department of Health created*, superseding the Board of Health. At the meeting of the city council on July 19, Alderman John

W. Stewart of the Select Committee of the City Council on Reorganization of the Board of Health brought in an ordinance abolishing the Board of Health and establishing the Department of Health, and moved its passage. Alderman Cullerton moved to amend the ordinance by striking out the section abolishing the office of city physician, which amendment was carried. He then moved to pass the amended ordinance, which motion was passed by a vote of 27 to 0. The ordinance provided for the appointment of a commissioner of health at a salary of \$1,500; an assistant commissioner at \$1,200; a secretary at \$1,200; an assistant at \$1,000; two meat inspectors and 13 sanitary policemen, at \$60 per month, each, and transferred the powers and duties of the Board of Health to the newly created department.

Dr. B. L. McVickar, the first Health Commissioner, was appointed July 24, 1876, and resigned November 22, 1876. Mr. H. P. Wright, registrar of vital statistics, then served as commissioner temporarily.

Total appropriation for the year, \$62,016.35. This included the following items: Scavenger work, \$17,000.00; removal of dead animals, \$6,375.00; unpaid bills, \$2,001.35, leaving a balance of \$36,640.00 for general health work.

The greatest scarlet fever epidemic in the history of the city occurred. Death rate per 100,000 from the disease, 19.89. Continued into next year, which showed the second highest fatality from the disease.

Chicago Woman's Club organized this year.

Dr. N. S. Davis made report on Progress of Medical Education in the United States. This was published by the National Bureau of Education and was an epoch making factor in raising the standard of medical education in this country.

1877: *Dr. Oscar DeWolf appointed commissioner of health* on January 29. He held the office for twelve years and inaugurated many of the measures which, in later years, when more fully developed, proved effective in the prevention of disease.

Dr. J. S. Knox appointed assistant commissioner, but served less than a year. Dr. Brock L. McVickar, secretary. Health Department annual report lists 27 employes, including three medical inspectors, one registrar of vital statistics, one secretary, one clerk, one milk inspector, eighteen sanitary police officers and two meat inspectors.

Salary of health commissioner raised to \$3,000.00.

City council Committee on Health (and County Relations) *first created*. Alderman J. T. McAuley, chairman.

Ordinance passed regulating the sale of milk and providing for a milk inspector, to which position Louis Merki was appointed. Twenty-nine convictions of milk dealers obtained.

Study made of lake pollution, which was found to be derived from two sources, viz.; the Chicago River and the dumping of refuse.

Fullerton Avenue conduit for supplying lake water to the north branch under construction.

Scarlet fever still very prevalent.

Illinois State Board of Health created. Dr. J. H. Rauch first president and acting secretary. Dr. F. W. Reilly appointed sanitary inspector.

State law enacted regulating the practice of medicine. The enforcement of this law was one of the principal functions of the State Board of Health.

Reporting of contagious diseases by physicians first enforced by the city. Placards required, for scarlet fever cases.

Fifth Annual Session of the American Public Health Association met in Chicago. Dr. H. M. Lyman delivered an address, protesting strongly against the placarding of scarlet fever cases. He deplored the waste of the cards and tacks and said the people revolted against the yellow card nuisance.

Dr. N. S. Davis read a paper on the Means of Diminishing the Infant Mortality from Diarrheal Diseases, laying stress on ventilation and the reduction of the temperature of the body in their prevention. He mentioned floating hospitals and country outings as the ideal preventive measures to be aimed at.

Nuisance from stockyards very acute. Unsuccessful attempt at prosecution in police court. Citizens' Association appointed a committee to aid in procuring evidence. Ordinance passed, prepared by City Attorney R. S. Tuthill, licensing slaughtering and rendering plants. This ordinance laid the foundation of all future licensing ordinances passed as sanitary measures.

Dam built in branch of the Des Plaines communicating with the Ogden canal after the city had filed complaint against the effect of the ditch on the river.

1878: Birth registration thought to be approximately complete; 11,152 births registered.

Twenty-seven indictments of operators of slaughtering and rendering plants, for creating and maintaining public nuisances, found by the Grand Jury. This was a result of the campaign made to rid the city of the slaughtering and rendering house nuisance. The new ordinance was sustained in the supreme court. The result of this movement was that all the slaughter-houses were established outside of the city limits, but soon the city grew and embraced the new location.

Study made of the prevalence of trichinae in hogs slaughtered at the yards. Eight per cent. of 100 hogs examined afflicted with trichi-

nae. Examination made by Dr. W. H. Belfield, who found that temperature less than boiling destroys the same.

Warmest weather on record.

Highest death rate from whooping cough on record. Rate 5.38 per 10,000.

Sulphur fumigation advocated after smallpox cases.

1879: Ordinance providing for the inspection of all places of employment passed and six inspectors appointed to enforce it.

Thirty-four of the 67 milk samples analyzed contained less than $2\frac{1}{2}$ per cent. butter fat.

State law passed prohibiting the sale of adulterated milk and milk obtained from cows which are diseased or fed on distillery wastes.

Survey of tenements made by a volunteer corps of 35 physicians, of which number Dr. D. A. K. Steele was one.

First recommendation of the State Board of Health to the City of Chicago when, after an investigation of the canal in the valley of the Des Plaines, the Board recommended that the pumping works at Bridgeport be rebuilt in order to cleanse the channel.

D. C. Cregier appointed city engineer to succeed E. S. Chesbrough.

1880: Thirty-four per cent. of 101 milk samples were found to contain less than $2\frac{1}{2}$ per cent. butter fat.

Highest diphtheria death rate in history of city, 29.07 per 10,000.

First factory and workshop inspection report made this year. W. H. Genung, chief inspector. Six inspectors of factories and workshops employed.

Fullerton Avenue conduit completed, 12 feet in diameter, between the lake and the north branch. Water forced through by two screws. At times water was pumped lakeward.

The first nurses' training school, the Illinois Training School for Nurses established.

Population according to U. S. Census, 501,185.

1881: A year of great immigration. Severe epidemic of smallpox started among immigrants, there being 1,180 deaths from the disease and nearly 3,000 cases. *City council revokes the ordinance permitting forcible removal of cases to hospitals*. Second highest annual mortality from smallpox in the history of the city. Rate 21.85 per 10,000.

Typhoid and diarrheal diseases were also very prevalent. Highest mortality of children under one year since the Fire.

Department of Buildings organized and given control of building inspection.

Sanitation of tenements, workshops and lodging houses brought under the control of the Department of Health by the enactment of a state law which required all plans of such buildings to be submitted to the health commissioner for approval.

Smoke control ordinance passed by the city council. Enforcement of same assigned to laboratory of Health Department.

Ordinance passed permitting bathing in Lake Michigan at the foot of Huron Street, and requiring that a six-foot fence be constructed there on the shore line.

Health Department appropriation, \$95,780.00, including \$55,000.00 for scavenger service.

Health Department report lists 40 employees.

1882: Severe smallpox epidemic continued, with 3,000 cases and 1,292 deaths. Death rate 23.02 per 100,000. This is the highest annual death rate from smallpox in the history of the city. 11,504 vaccinations were performed. Smallpox hospital placed under charge of Catholic Sisters.

Commissioner DeWolf given professorship of Public Hygiene in the Chicago Medical College and made honorary member of British Association for the Advancement of Science.

Dr. F. W. Reilly appointed assistant secretary of the State Board of Health.

1883: Ordinance passed requiring that the commissioner of health shall annually make a report to the city council of statistics of labor, wages and cost of living in connection with the several trades and occupations.

Ordinance passed licensing ordinaries (restaurants).

The Sanitary News, a semi-monthly journal of sanitary science, started. G. P. Brown, editor.

Considerable attention to workshop inspection; 2,444 tenement plans approved, of which 1,142 were so-called "flat" buildings.

First course of lectures on *Germ Theory of Disease* in the city given by Dr. H. Gradle at the Chicago Medical College.

Chicago Veterinary College established.

System of plumbing and sewerage ventilation first introduced in accordance with the state law passed the previous year.

1884: Exhaustive investigation of places of employment, including wages paid to workers and cost of living.

Smoke inspector appointed under the jurisdiction of the Department of Health.

Highest annual mortality from measles on record, 5.06 per 10,000. New pumps at Bridgeport completed and put into operation.

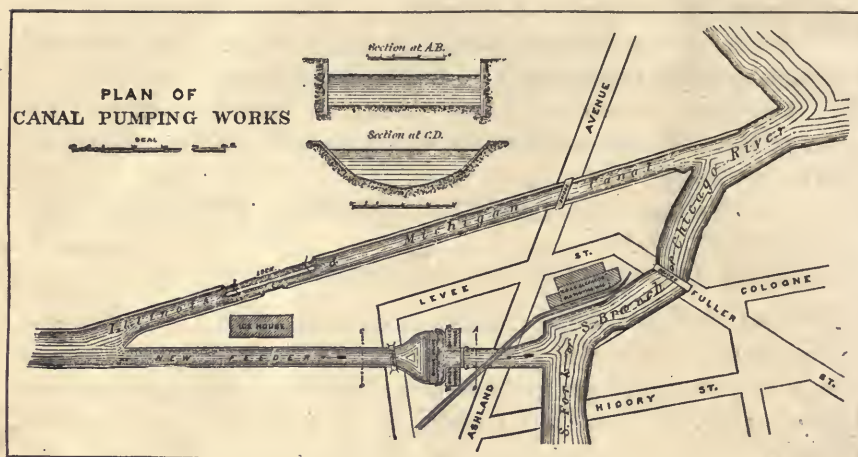


FIG. CCXV—Ground Plan of Canal Pumping Works at Bridgeport.

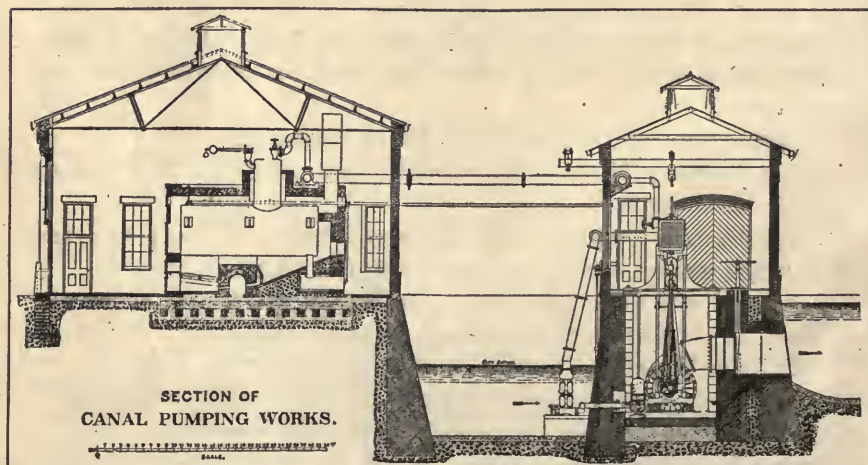


FIG. CCXVI—Section of Canal Pumping Works at Bridgeport, as rebuilt and put in operation in June, 1884. (From Andreas History of Chicago.)

Chicago Master Plumbers' Association organized. Andrew Young, first president.

Ordinance passed requiring seats for females at places of employment.

Report of Citizens' Association on Tenement House Conditions, published, setting forth the wretched condition of tenements where working men are housed.

1885: Health Department adopted contract system of scavenger service. Cost of service this year \$75,000, which was about one-third of the cost of the old system in the previous year.

Health Department report lists 61 employees.

Bill passed by the legislature, regulating the production and sale of dairy products.

Drainage canal suggested and outlined by Messrs. Cooley, Guthrie and Dr. F. W. Reilly in a report of a sub-committee of the Citizens' Association Committee on Drainage and Water Supply.

Another cholera scare; \$100,000 asked for cleaning the city.

All of the 140,000 children attending the schools examined and found to be protected against smallpox.

Prof. J. H. Long made an examination of the city's milk supply, found half of samples below grade and suggested the chemical standards which were subsequently adopted. He continued testing the milk supply for three years and from this developed the present milk inspection work of the Department.

First attention called to *flies as carriers of disease* by Dr. F. W. Reilly in an editorial in the Morning News.

Heaviest rainfall on record—6.19 inches in 24 hours on August 2 and 3.

Lake level unusually high.

Hyde Park Water Tunnel, one mile in length, completed. Before this the Hyde Park station was supplied by water taken from the lake through iron pipes extending 1,400 to 2,000 feet into the lake.

First intubation in city by Dr. F. E. Waxham.

City Hall, started in 1881, occupied.

Daily News Fresh Air Sanitarium established.

1886: Appropriation for Health Department, \$258,356.34, including \$176,196.34 for scavenger service.

Salary of health commissioner raised to \$4,000.

Report received from committee appointed by city council to investigate smoke consumers.

Resumé published by the Health Department of housing work done during the last ten years.

Lake level unusually high.

Citizens' Association assisted in smoke abatement work.

Efforts started to stop the coloring of milk.

Report made on the Water Supply and Sewage Disposal of Chicago by Dr. J. H. Rauch, Secretary of the State Board of Health, based on examinations made by J. H. Long. The diversion of the sewage from the lake into the river and canal and dilution of the same with an average of 14,000 cubic feet of water for every 100,000 inhabitants is recommended. The construction of a proper waterway to carry out this plan is urged by the Board.

1887: A new act of the legislature passed, regulating the practice of medicine and providing for the appointment of a state board of health and the registration of physicians.

Garbage furnace capable of consuming 150 tons daily constructed at Seymour Street and Grand Avenue. Cost, \$7,000.00.

Commissioner recommended that custom of dumping garbage in clayholes be abandoned.

Inspection of 31,171 occupied dwellings made and plumbing found defective in 85 per cent.

Plumbing law drafted in co-operation with Illinois Association of Architects and Chicago Master Plumbers' Association, but failed to pass the legislature.

Tunnel, 3,000 feet long, completed at Chicago Avenue for emergencies in case of fire. This at times was used for the regular water supply, especially in 1892.

Drainage and Water Supply Commission appointed by mayor in accordance with a resolution of the city council, with Rudolph Hering as chief engineer, made report recommending the construction of a new drainage channel.

1888: High death rate of children under five years.

Health Commissioner recommended the establishment of free baths.

Foundations laid for the quarantine of diphtheria by declaration that it is not a filth disease but a contagious disease like smallpox.

Visiting Nurse Association founded this year.

Comprehensive examination of water in Illinois and Michigan Canal and Illinois River by J. H. Long.

Garbage question still pressing and required much attention on the part of the Health Department. Garbage receptacles of standard style designed. Over half of the expenditures of the Department were for scavenger service. Cost of maintenance of crematory, \$11,643.00.

Electric street lighting system inaugurated.

Health Department report lists 67 employes. Meat and stock yard inspectors increased to nine.

1889: *Dr. Swayne Wickersham* became *commissioner of health*. Andrew Young appointed chief tenement and factory inspector, but served only one year.

Rules governing drainage and plumbing of new buildings promulgated by Health Department. Five women tenement inspectors appointed.

Dr. Heman Spalding entered Department as medical inspector.

Comprehensive tenement house investigation made by the City Homes Association.

On July 27, 4.02 inches of rainfall occurred in 3 hours and 34 minutes.

Chicago Sanitary District established by act of legislature.

June 29, 133 square miles of territory annexed, with a population of 223,300. Total area of city prior to this annexation, 43.9 miles.

Hull House opened September 18.

Health Department report lists 75 employees.

1890: Severe *outbreak of influenza*, beginning in January and lasting until April. Mortality rates in the three next succeeding years very high, principally due to deaths from respiratory diseases.

Dispute with State Live Stock Commission in regard to bringing diseased animals into the city and slaughtering them here. Special place established for the slaughter of such animals.

Scavenger service, which was still under the contract system, placed under care of a general sanitary officer. Study made of garbage disposal in other cities.

Odor division created in the Department of Health, C. C. Cobb in charge, and also a sanitary division, with ward officers. Walter V. Hoyt, general sanitary officer.

Cognizance taken of the *extensive manure nuisance* from 100,000 horses in the city, and also of the cutting of ice in ponds and clay holes in the city.

Ordinance presented prohibiting privy vaults on sewerred premises.

Dr. E. Garrott appointed chief medical inspector. He had been a medical inspector since 1877.

Health Department report lists 60 employees, including 34 ward officers.

Population, according to U. S. Census, 1,099,850.

1891: *Dr. John D. Ware* appointed *commissioner of health*. Period of great municipal development and growth. Highest typhoid fever death rate in the history of the city. Rate 173.8 per 100,000 population.

Disposal of garbage and household refuse became a matter of much public concern.

Disparaging statements made by other municipalities in reference to sanitary condition of the city attracted attention on account of the oncoming World's Fair.

Comprehensive plumbing ordinance passed by city council.

Lake level lowest in history of the city.

U. S. Meat Inspection Law Passed, applying to interstate shipments.

Health Department report lists 102 employes, including 37 tenement and factory inspectors in addition to the sanitary police officers.

Health Department especially active in enforcing the smoke abatement ordinance.

1892: Great increase in population on account of the oncoming World's Fair. Typhoid death rate, still high, 124.1 per 100,000.

As a result of the paper of Sedgewick and Hazen on Typhoid Prevalence in Chicago, the State Board of Health started an exhaustive investigation of zymotic diseases in Illinois, in which they were assisted by the trustees of the Sanitary District. A report of this investigation was presented at the World's Fair in the following year.

Ordinance passed, adding *diphtheria, typhoid fever and typhus* to the list of *reportable diseases*.

System of postal card reports for contagious diseases inaugurated.

Contract system of garbage removal pronounced unsatisfactory by the Health Department. For a long time it had been unsatisfactory to the public.

Cholera scare. Thirty thousand dollars appropriated to clean up the city.

Four-mile water tunnel at 14th Street, and Lake View Tunnel, one mile long, completed.

A division of milk inspection created by ordinance, independent of the Health Department, and a comprehensive milk ordinance passed requiring the licensing of milk dealers, the maintenance of sanitary conditions, and establishing chemical standards of purity.

Work on the new drainage channel inaugurated on September 3. Dr. F. W. Reilly delivered one of the addresses made.

Track elevation ordinance passed.

Shore intakes at Chicago Avenue and Lake View in common use for water supply purposes this year.

Health Department report lists 101 employes.

University of Chicago opened October 1.

1893: *Dr. A. R. Reynolds, commissioner of health.*

Andrew Young reappointed chief tenement and factory inspector. Health Department report lists 92 employes.

World's Fair visited by 30,000,000 people. Much overcrowding in city. Also much unemployment and labor unrest.

Four-mile crib opened. Owing to the unavoidable delay in extending the Hyde Park tunnel it was found necessary to purify all the water supplied at the World's Fair by Pasteur filtration.

The lodging houses were crowded and the discovery of cases of smallpox led the Department to inaugurate a vigorous campaign of vaccination. One hundred and forty cases developed, of which 23 died.

First public bath house established, the Carter H. Harrison, at 759 Mather Street.

Ordinance passed establishing the Municipal Laboratory.

Division of milk inspection brought under the jurisdiction of the Health Department and established in connection with the laboratory.

Use of shore intakes at Chicago Avenue and Lake View permanently discontinued.

Scavenger service transferred to Department of Public Works on March 13.

Summer characterized by a severe drought, the longest on record.

Isham Randolph appointed chief engineer of the Sanitary District.

Highest annual rate of deaths from violence on record. Rate 15.17 per 10,000. The death rate from tuberculosis was also unusually high this year.

1894: Epidemic of smallpox, 2,332 cases, 1,033 deaths, 1,084,500 vaccinations performed. Vaccination creed of the Department first issued.

Additional hospital accommodations provided by the establishment of an emergency smallpox hospital, for which the Visiting Nurse Association furnished the nursing service.

A year of much unemployment, labor disputes and strikes.

Monthly statement of mortality published by the Department first contained notes by the commissioner on health conditions.

Plans made for the construction of a large isolation hospital for which the foundations were laid and excavations made.

The laboratory was equipped to make analysis of milk instead of having this analysis made at private laboratories, as had been the custom heretofore. Adolph Gehrman, director. In September examinations of diphtheria cultures were begun.

Extensive examinations made of the city water supply.

Chronological summary of causes of death from 1851 to date first introduced in annual reports of the Department.

Hyde Park tunnel extended to two miles.

February 12, day of greatest recorded wind movement. Average 70 miles for 10 consecutive hours. Ten inches of snowfall.

Dr. F. W. Reilly became associated with the Health Department and was appointed *assistant commissioner* in January, 1895.

Circular of Information first issued on the hot weather care of babies in June of this year.

Report made on study of lake currents by M. W. Harrington of the U. S. Weather Bureau.

Health Department report lists 106 employees.

1895: *Mr. W. R. Kerr*, appointed *commissioner of health*.

Sanitary administrative work largely thrown on *Dr. Reilly*.

First diphtheria antitoxin issued October 5. Corps of antitoxin administrators appointed. Effects obtained tabulated and "the great change wrought by antitoxin in the mortality of the disease demonstrated."

Circulars of information first issued on the prevention of consumption and antitoxin treatment of diphtheria.

Plans of isolation hospital modified in order to reduce cost; size reduced to about 125 bed capacity.

Ordinance passed licensing and regulating undertakers. *Dr. M. O. Heckard*, appointed registrar of vital statistics.

New form of death certificate drafted by Chicago Health Department and adopted by State Board of Health requiring physicians to fill out only the cause of death.

All employees of Health Department placed under *Civil Service*.

Daily analysis of the water supply inaugurated.

Eight of the ten medical inspectors of the Department assigned to school inspection.

Funeral inspection begun by the Health Department.

Chicago Lying-in Hospital and Dispensary established.

Appropriation for Health Department, \$219,200.60.

1896: Commission appointed to prepare plans for intercepting the city sewers and diverting them to the river.

Physicians allowed to assume the responsibility of quarantining cases of contagious diseases under their care.

First circular issued giving advice to the family in a case of contagious disease.

New Isolation Hospital at 34th Street and Lawndale Avenue completed.

Hospital inspection and control inaugurated.

Widal tests for typhoid fever started by the laboratory in November.

By authority of the State Board of Health the Chicago Health Department promulgates rules regulating the practice of midwifery in the city.

The Health Department this year had its own attorney and 1782 cases were prosecuted.

Ordinance passed licensing ice dealers and regulating the production and sale of ice.

United States Department of Labor makes an exhaustive investigation of the social and economic conditions of Italians living in the slum districts of Chicago.

May 25, only tornado recorded as occurring in city. Passed through Norwood park.

First incubator installed in the Department of Health laboratory. Chicago Federation of Labor organized.

Salary of health commissioner raised to \$5,000.

1897: *Dr. A. R. Reynolds* became *commissioner of health the second time* and held office for eight years.

State law passed providing for the licensing of plumbers and the inspection of plumbing.

City authorized by act of the legislature to contract for the collection and disposal of garbage for periods not exceeding five years.

The second free public bath opened, the Martin B. Madden, at 39th Street and Wentworth Avenue.

Ordinance passed prohibiting the sale of cigarettes containing injurious substances and the Health Department laboratory made numerous examinations of cigarettes on the market.

Act of Congress passed June 3, providing for the deepening of the Chicago River.

Four antitoxin and incubator stations for diphtheria cultures established in different sections of the city.

John Ericson appointed city engineer.

Chicago Association of Day Nurseries organized.

1898: Main sewers in 12th and 22nd Streets changed in grade so as to discharge into the river instead of into the lake.

Disinfection with formaldehyde begun, first by the use of generators and later in the year by the sheet method.

Health Department inaugurates a system of reporting births by postal cards. This was continued for three years.

Chief Medical Inspector E. Garrott died April 19.

E. R. Pritchard appointed secretary, Department of Health, March 14.

Soldiers afflicted with typhoid fever brought to Chicago hospitals from mobilization camps during the Spanish-American War.

Epidemic of cerebrospinal meningitis.

1899: Clinical instruction of medical students at smallpox hospital instituted.

Study of the milk supply by the University of Illinois Agricultural Experiment Station, showed that the milk was quite inferior in certain districts.

Between January 1 and April 30 there were recorded 549 deaths from influenza.

Efforts made to stop the dumping of river dredgings in the lake.

Dr. Heman Spalding appointed chief medical inspector on May 1.

Volunteer corps of 73 physicians detailed in July in congested districts to give instructions to mothers in regard to keeping the babies well.

Dr. I. D. Rawlings entered the Department of Health as a medical inspector. Appointed assistant chief medical inspector five years later.

Act of legislature enacted, providing for the appointment of a state food commission.

1900: *New drainage channel opened* January 17. Total cost \$45,220,588.

State of Missouri on the same day started an injunction proceeding against the state of Illinois, seeking to restrain the Sanitary District from discharging its drainage into the Mississippi River.

Comprehensive examinations of the water in the Canal, the Des Plaines, Illinois and Missouri Rivers, and the Mississippi River above the mouth of the Illinois, and as far down as Jefferson Barracks, made by a commission under the direction of the commissioner of health. These examinations were started in May, 1899, and continued to July 1, 1900, and showed that nearly all of the pollution in the Illinois River from Chicago sewage had disappeared before reaching Peoria. Peoria contamination was cleared up at Grafton. The water at the mouth of the Illinois averaged better than that of the Mississippi above their junction and these waters averaged better than that of the Missouri at their junction below. The investigation also showed that the St. Louis water supply was largely taken from the Missouri contribution to the Mississippi River.

Great fluctuations occurring normally in the lake levels called attention to by the Health Department and especially the difference of 8 feet between the low level of 1891 and the high level of 1886.

Department of Child Study organized by the Board of Education.

Formaldehyde detected in 293 samples of milk. Campaign started to discontinue its use as a milk preservative.

The Health Department published a study of the increasing duration of life in Chicago and demonstrated that the average duration had more than doubled in a single generation. The average for 1898 was 29.4 yrs. as compared with 13.9 yrs. in 1869.

Chicago Health Department awarded gold medal at Paris Exposition for display showing methods of work and results accomplished.

Resolution introduced into city council by Alderman William Hale Thompson establishing the *first public playground*.

Associated Jewish Charities founded.

Fifty inspectors assigned to school inspection by the Board of Education, January 8. Forty were discharged at the end of five months. The remaining ten continued to visit schools on emergency calls.

Northwestern Land and Lake Tunnel completed to supply the Central Park and Springfield Avenue stations.

Total appropriation for Health Department, \$234,130.00.

Population, according to U. S. Census, 1,698,575.

Very hot in August.

1901: Boundaries of 15 sanitary districts of city established by the Health Department for statistical purposes.

Ordinance passed *prohibiting spitting* in public places.

Municipal *Lodging House* established through efforts of the Chicago Homes Association and placed under the Police Department.

State law passed providing for the registration of births and deaths, and embodying the compulsory permit feature.

Ordinance passed requiring the separation of garbage and rubbish.

Health Department awarded medal at Pan-American Exposition in Buffalo.

"State of City's Health" published every week in newspapers and publication of monthly statement of mortality discontinued.

Very hot in July. Six periods of four or more days of continuous sunshine. The hottest temperature on record occurred on July 21. Summer marked by prolonged periods of drought.

Free bathing beaches opened. Expense borne by subscriptions made by philanthropic citizens.

An exhaustive study of the Social Problem at the Chicago Stock Yards published by Charles J. Bushnell.

A sketch of the sanitary history of the city entitled "The Fight for Life in Chicago," by H. W. Thurston, published by the Board of Education.

1902: Severe *outbreak of typhoid* in West Side river wards, due to pollution of water supply "wells" at pumping station. Typhoid fever death rate for the year 44.5 per 100,000.

Comprehensive tenement house ordinance passed.

Much activity in milk inspection. Dr. A. Gehrman resigned position as director of the laboratory, June 21. Inspection of country dairies inaugurated. The Chicago Civic Federation paid salaries and traveling expenses of two dairy inspectors.

Fourth of July "Don'ts" first promulgated by Health Department.

Health Department starts publication of a weekly bulletin entitled "State of Chicago's Health."

Births registered by Chicago Health Department under the new registration law and postal card method of reporting discontinued.

Results of Chemical and Bacteriologic Examinations of Illinois, Missouri and Mississippi River Water, by J. T. Long, published by Illinois State Board of Health.

Geologic Survey of the Chicago Area published by the Department of the Interior, based on surveys made in 1889-90 and 97-99, jointly with the Chicago Sanitary Commission.

Comprehensive tenement ordinance passed.

Memorial Institute for Infectious Diseases established.

1903: Smoke abatement transferred to the newly created Department of Boiler Inspection.

Compulsory burial permit requirement eliminated from state registration law.

Investigation of the Health Department, especially the sanitary bureau, by the Civil Service Commission. The report did not justify any radical changes.

City Milk Committee organized for the distribution of modified and pasteurized milk.

Tuberculosis Committee of the Visiting Nurse Association organized.

Very high death rate from pneumonia. Rate 25.01 for 10,000.

Dr. J. F. Biehn appointed director of laboratory December 11.

Chicago Medical Society reorganized, and *branch societies established.*

Memorial Institute for Infectious Diseases established.

City Club organized.

1904: *Country dairy inspection inaugurated.* Work largely educational and directed against malt feeding which was found on 19 per cent. of farms visited.

Ordinance passed requiring milk cans to be sealed in transit.

Municipal Lodging House opened at present location.

Chicago Law and Order League formed.

Report of Civic Federation on the analysis of Chicago market milk; 26.8 per cent. below grade in butter fat, 30.9 in solids not fat, 15 per cent. of restaurant samples contain formalin. Average bacterial content on May 18, 942,000. Analysis made by P. G. Heine-mann.

Dr. T. B. Sachs published a report on the prevalence of tuberculosis in the West Side Jewish district.

Chicago Health Department given highest award by the Louisiana Purchase Exposition at St. Louis for the best and most comprehensive display of public health methods.

Greatest snowfall occurred in this year.

Lowest annual death rate from all causes in the history of the city. Rate 13.85 per 1,000. Also the lowest death rate from diphtheria on record, 2.15 per 10,000.

Juvenile Protective League incorporated. In 1909 its name was changed to Juvenile Protective Association.

1905: *Dr. C. J. Whalen appointed commissioner of health.*

Laboratory moved out of City Hall to 215 W. Madison Street.

Meat inspection reinstituted at Stock Yards and special attention given to inspection of foods in cold storage.

Sanitary inspection of milk depots made and 5838 samples of milk examined bacteriologically.

Efforts made to lower cost of antitoxin and free distribution of same resumed.

Five hundred forty-six cases of smallpox occurred during the year.

Thirty-ninth Street intercepting sewer opened in December, diverting all sewage from the lake between 31st and 75th Streets. Marked fall in typhoid fever death rate.

The second lowest annual death rate from all causes in the history of the city. Rate 13.98 per 1,000.

Average age at death in the city 31 years, 10 months. Increase of 100 per cent. over 1874.

Ordinance passed creating the bureau of food inspection, but bureau remained under the jurisdiction of the laboratory until 1909.

Municipal Court Act adopted by referendum vote.

Tuberculosis exhibit held in the Public Library.

A study of tuberculosis in Chicago published by the City Homes Association.

An act of the legislature passed providing for the Pasteur treatment of poor persons to prevent rabies.

Ordinance passed closing all offices in the City Hall, except those of the Health Department, every Saturday afternoon.

Health Department appropriation, \$288,733.00.

Health Department had 160 employees.

1906: Much activity in food inspection work.

Large condemnations of canned goods and cold storage poultry.

The Jungle, by Upton Sinclair, published in February.

McNeil-Reynolds report made on sanitary conditions at Union Stock Yards.

Federal meat inspection law passed regulating sanitary condition of plants and requiring the inspection of all meats and meat products prepared in establishments shipping products in interstate commerce.

Ordinance passed licensing and controlling restaurants.

Committee from Chicago Medical Society pronounced Health Department rules for meat inspection too severe and stringent.

Dairy inspectors made reports on sanitary conditions of farms and insanitary dairies were excluded.

First bacteriologic examination of milk from dairy farms.

Two local outbreaks of typhoid fever, one traced to well water and the other to milk.

Water supplied by Rogers Park Pumping Station polluted, supply discontinued, and territory supplied from Lake View Station.

High price of antitoxin broken by an arrangement made with the Memorial Institute of Infectious Diseases.

Decision rendered by United States Supreme Court in February dismissing the injunction proceedings of the state of Missouri, seeking to stop the discharge of Chicago sewage into the Mississippi River.

Sanitary District made application to the War Department to reverse the flow of the Calumet River.

Chicago Tuberculosis Institute organized, succeeding the Tuberculosis Committee of the Visiting Nurse Association.

First contract made for the disposal of the city's garbage at the rate of \$47,500.00 per year, with the Chicago Reduction Company, a corporation formed by the successful bidders. This contract was later declared illegal by a Master in Chancery.

Bulletin of the Department of Health first circulated as a weekly publication.

Chicago Society of Social Hygiene organized.

Health Department appropriation, \$457,645.00.

1907: *Dr. W. A. Evans appointed commissioner of health* on April 16.

Mayor's term of office increased to four years.

Practice of allowing physicians to assume responsibility for quarantine discontinued.

There had been a severe epidemic of scarlet fever during the winter, due to infection of the milk supply in the country. In January 3,058 cases occurred.

During the epidemic 250 school medical inspectors were employed, of which number 100 remained in the service.

Ambulance service transferred to Health Department.

Comprehensive smoke abatement ordinance passed and Department of Smoke Inspection created.

Reporting of tuberculosis enforced. School nursing service inaugurated.

Chicago awarded silver prize for tuberculosis control ordinances by International Congress on Tuberculosis.

Report of Milk Supply of Chicago and Twenty-six Other Cities by John M. Trueman, published by the Illinois Agricultural Experiment Station. Report showed 19 per cent. of 325 samples below grade in butter fat; 63 per cent. of 209 below in total solids; 88 per cent. contained a visible dirt sediment.

Milk Commission appointed by the commissioner of health to study the problem of the production and marketing of milk.

School of Sanitary Instruction organized.

Health Department Bulletin, issued as the Bulletin of the Chicago School of Sanitary Instruction, and entered as second class matter.

C. B. Ball appointed chief sanitary inspector, May 14. Ordinance passed controlling bakeries. With this the campaign to abolish underground bakeries was inaugurated.

City meat inspectors withdrawn from slaughter-houses under government inspection.

Department's right to condemn foods affirmed by United States Supreme Court decision.

Dr. G. Koehler appointed chief of the bureau of food inspection, August 10.

Old smallpox hospital converted into a municipal hospital for diphtheria cases.

Methods of night soil disposal changed, so as to allow depositing of same in sewers.

Seven tuberculosis dispensaries established by the Chicago Tuberculosis Institute.

Rudolph Hering makes report on the disposal of sewage from the Calumet region, recommending the construction of the Sag channel.

Second lowest diphtheria death rate on record—2.7 per 10,000.

Ordinance providing for the heating and ventilation of street cars passed on December 2.

Ordinance passed licensing bathing beaches.

Salary of health commissioner raised from \$6,000 to \$8,000.

Children's Pavillion of Cook County Hospital opened.

State Department of Factory Inspection established.

1908: *Department of Health practically doubles its activities.*

Records and inspection methods greatly improved.

Two local outbreaks of typhoid fever traced to milk supply.

Health Department inspectors placed in uniform.

Ordinance passed July 13, *requiring all milk to be pasteurized unless obtained from tuberculin tested cows.* Ten thousand cows tuberculin tested. *Score card system of dairy inspection inaugurated.*

Ordinance passed controlling hospitals and dispensaries.

Municipal Lodging House transferred to Department of Health.

Police stations made distributing stations for culture media and antitoxin, designated to receive diphtheria cultures for transmission to Department laboratory.

Publicity work of Department greatly extended, especially along the lines of infant mortality and respiratory disease prevention. Thus much attention was given to pure milk and fresh air. Weekly foreign language and neighborhood press service established. Lecture bureau created and lectures given in foreign languages.

School nursing service inaugurated, under supervision of Visiting Nurse Association.

Lawrence Avenue conduit completed. Sewage from north shore intercepted.

Solution of calcium hypochlorite used for purification of the effluent by C. A. Jennings at the experimental sewage treating station on Bubbly Creek.

Health Department discontinues the registration of births, same taken over entirely by County Clerk.

Plan of Chicago prepared under direction of Commercial Club by Donald H. Burnham and Edward H. Bennet.

New smallpox hospital opened. Capacity 40 beds.

One hundred physicians sent to congested districts during July and August to instruct mothers in the care of babies.

State law in effect providing for the registration of nurses.

Fresh-air schools established, the first open-air school being located at the Harvard School, and the first open window school rooms at the Graham School. Elizabeth McCormick Open-Air School established at the Mary Crane Nursery.

Lake Michigan Water Commission appointed.

Tuberculosis and pneumonia made reportable diseases.

May. Explosion and fire at the Chicago Reduction Works. Ten killed.

Report on Electrification of Railway Terminals made by technical committee under auspices of Local Transportation Committee of City Council.

Old City Hall torn down. Health Department moved to 215 Madison Street.

August 31. New five-year contract made with the Chicago Reduction Company for disposing of the city's garbage at the rate of \$45,500.00 per annum.

Comprehensive rules promulgated by the commissioner of health regulating the handling and sale of milk, approved by the city council.

Ordinance passed prohibiting the sale of bulk milk in stores.

Ordinance passed requiring all meat sold in the city to be inspected, passed and marked "Approved" either by the city, state or federal inspectors.

Illinois Supreme Court holds that compulsory vaccination cannot be enforced except in the presence of an epidemic of smallpox.

Elizabeth McCormick Memorial Fund established.

1909: Rules promulgated regulating the pasteurization of milk and the tuberculin testing of cows. The systematic bacteriologic examination of milk samples and testing of pasteurizers inaugurated.

Dr. L. L. Lumsden of the U. S. Public Health Service studied the typhoid situation in Chicago at request of health commissioner.

By a referendum vote it was decided to *establish a municipal tuberculosis sanitarium* under the provisions of the Glackin Law.

Sane Fourth program launched by public meetings particularly one of the Hamilton Club, and the Health, Police and Fire Departments.

First Board of Directors of the Municipal Tuberculosis Sanitarium appointed, consisting of Harlow N. Higinbotham, President; Dr. Theodore B. Sachs, Secretary, and Dr. William A. Evans.

Dr. F. W. Reilly, assistant health commissioner, died December 16, 1909. "Dr. Reilly was the first to conceive the idea of publishing a weekly health bulletin. He led in all of the fights for better living conditions with his powerful health sermons, and especially in the fight against the sewage-contaminated water supply."

Dr. C. St. Clair Drake became editor of the Bulletin of the Health Department.

Baby welfare campaign carried on by house to house visiting by Health Department nurses in co-operation with social agencies. Dr. Caroline Hedger in charge.

International Classification of causes of death adopted by the

Health Department, January 1. At the same time death certificates were changed to conform with the United States standard.

State Board of Health assumed the distribution of diphtheria anti-toxin. Twenty-eight distributing stations established in Chicago.

Dr. F. O. Tonney appointed director of laboratory on October 14.

Investigation of milk supply made by Geo. M. Whitaker of the U. S. Department of Agriculture at request of commissioner of health and dairy inspectors instructed in scoring methods.

Durand Hospital of the Memorial Institute of Infectious Diseases established.

Chicago Fresh Air Hospital established.

United Charities organized by the consolidation of Relief and Aid Society and the Bureau of Charities.

State law enacted prohibiting the employment of women in certain industries and institutions longer than ten hours a day.

1910: Much work done on testing the efficiency of pasteurization.

Emergency Ambulance Service transferred back to the Police Department.

School dental service inaugurated by the Chicago Dental Society.

Compulsory ventilation ordinance passed, applying to public buildings, conveyances, factories and workshops.

Dr. G. Koehler appointed assistant commissioner of health, February 25.

Federal law passed prohibiting the dumping of refuse in the lake within eight miles of the shore.

Persistent efforts made to repeal the pasteurization ordinance. Commission of the state legislature investigated the question.

New milk standards applied to ice-cream.

First Sane Fourth, parades and park picnics replacing fireworks.

Venereal disease prevention advice first published in the Bulletin and pamphlets on the subject distributed in the lodging house.

Municipal Venereal Disease clinic opened and maintained about six months in the Iroquois Memorial Hospital, conducted by a volunteer staff. Premises placarded and quarantine established in houses of prostitution where there were cases of venereal disease reported. Prostitutes convicted and held in Bridewell until cured of venereal diseases. Dispensaries required to report venereal diseases.

Vice Commission appointed to make a study of vice conditions and necessary measures for suppression of same.

Moving pictures used for health education purposes.

Lead found in carbonated beverages and campaign made to eliminate the same.

Sediment test for dirt first applied to milk samples.

Study of the housing problem in Chicago by Sophonisba P. Breckenridge and Edith Abbott.

North Shore Drainage Channel opened.

City departments, including the Health Department, investigated by the Commission on City Expenditures (Merriam Commission). No report or unfavorable comment made on the Health Department.

Bookkeeping and accounting of the Health Department transferred to the Comptroller's office.

Municipal Tuberculosis Sanitarium took over the seven dispensaries of the Chicago Tuberculosis Institute.

School Nursing Service transferred to Health Department.

Iroquois Memorial Emergency Hospital opened.

Infant Welfare Society organized as a successor to the Chicago Milk Commission. First station started in December.

The Chicago Commission on Ventilation organized.

Revised and comprehensive Building Code passed, containing advanced housing and ventilation standards.

Woman's City Club organized.

No deaths from smallpox since 1905.

Sarah Morris Hospital for Children established.

Warmest spring on record.

Population according to U. S. Census, 2,185,283.

1911: *Dr. George B. Young appointed commissioner of health* on June 6.

Health Department moved into new City Hall, which was completed this year.

May 11, Child Welfare Exhibit held in Coliseum.

Health Department began promulgating department and bureau orders in serial form. In 1914 and 1915 these were codified and issued as handbooks of department and bureau regulations.

Ordinance passed prohibiting common drinking cups.

Ordinance passed prohibiting common roller towels.

Illinois Supreme Court decided that city food regulations may be more stringent than those of the state.

State law passed prohibiting cities from requiring tuberculin testing of cattle.

Report made by George M. Wisner, chief engineer of the Sanitary District, on methods of sewage disposal other than by dilution.

Segregated vice district abolished.

Northwest Sanitary Drainage Association incorporated.

Southwest Land and Lake Tunnel completed, supplying the Roseland Pumping Station.

Water survey made by T. C. Phillips this year and continued in 1912 showed that 50 per cent. of the amount of water supplied per capita is lost as a result of leaky plumbing and underground wastage. Per capita pumpage, 190 gallons.

Municipal Employees' Pension Fund established.

—Milk outbreak of typhoid fever occurred in the Englewood district, resulting in 71 cases.

Warmest year on record; accumulated departure, 1,262 degrees Fahrenheit.

September 18. First contract let by the Sanitary District for the *construction of the Calumet-Sag Channel*.

Health Department *laboratory began making Wassermann tests* for syphilis.

Health Department *starts giving the Pasteur treatment* at the Iroquois Memorial Hospital for the prevention of rabies.

Health Department advises the public to be vaccinated against typhoid fever, especially those persons going to the country for a vacation. Anti-typhoid vaccinations given free at the Iroquois Memorial Hospital.

"Sané Fourth" ordinance passed prohibiting the use of fireworks and explosives except at public displays, for which a permit is required.

1912: Health Department resumed the *comprehensive tabulation of mortality statistics*. This had been discontinued since 1910.

A detailed system of collecting and tabulating statistics installed and prescribed for all bureaus of the Health Department. Comparative statistical reports required to be made to the commissioner by each bureau at the end of every month.

Central system for filing correspondence and reports adopted by the Health Department.

March 15. *Chlorination of water supply begun*. Calcium hypochlorite solution first applied at the E. F. Dunne Crib in an experimental way. On July 16 this treatment was extended to the Hyde Park Crib and used when the wind was from off shore. The treatments were discontinued during the winter months on account of the solution freezing in the temporary installations.

~~Ventilation division created in bureau of sanitation for enforcement of ventilation ordinance.~~

Illinois Supreme Court upheld city ordinance prohibiting cellar bakeries.

June. Commission, appointed by order of the city council to investigate the disposal of garbage in other cities, recommended 15 months' extension of the city's contract with the Chicago Reduction Company, expiring on August 31, 1913. Citizens' Association Report

published, advising that bids be received without delay for the reduction of the city's garbage for a five-year period.

August 14. *New milk ordinance passed*, requiring all milk to be pasteurized by prescribed methods unless produced on inspected farms, and requiring the refrigeration of milk in transit. The ordinance also establishes standards of purity for each grade, and provides that all milk sold to the consumer must be contained in tightly closed receptacles, properly labeled and dated.

The division of fish inspection abolished and the Health Department charged with the work.

Little Mothers' Clubs established in the public schools.

Ordinance passed requiring ventilation of street cars and prescribing standards.

Cold storage ordinance passed.

Ordinance passed prohibiting dumping in lake within four miles of any water intake.

Board of County Commissioners makes appropriation of \$5,000 for payment of birth registration fees. Similar appropriations were made during the three following years.

Bureau of hospitals, baths and lodging house created in Department of Health.

First bond issue for the construction of a municipal contagious disease hospital approved by a referendum vote.

Extensive milk-borne outbreak of streptococcus sore throat, due to milk infection, started in December and lasted until the following February.

January the coldest month on record.

1913: Scarlet fever very prevalent; 10,600 cases, 906 deaths. Also diphtheria, of which there were 8,593 cases and 952 deaths.

Handbook of Regulations issued for field employes of the bureau of medical inspection.

Ordinance passed regulating manure storage and prohibiting manure receptacles in alleys after January 1, 1916.

All typhoid fever cases reported to the Department investigated by supervising health officers or medical inspectors.

Classified system of quarantine adopted for diphtheria, scarlet fever and whooping cough.

Four *infant welfare stations established* by Health Department.

Ordinance enforced prohibiting the discharge of refuse or sewage from boats within four miles of any water intake.

Health Department charged with the disposal of the city's garbage. Temporary waste disposal plant started at Grace Street and

the north branch of the Chicago River and maintained until August, 1914, pending the purchase and rehabilitation of the Reduction Works.

Waste Commission appointed by the Mayor, on order of the city council, to make a thorough and comprehensive study of the waste disposal problem and recommend a plan of handling the same. Engineers J. T. Featherston and J. S. Osborn employed by the Commission to make a technical survey and recommendations.

Extensive tests made of street car ventilation.

Three food-borne outbreaks of typhoid fever, two due to milk infection and the other resulting from a "carrier" working in a downtown restaurant.

August 15. Calcium hypochlorite treatment first applied to the water supplied by the Lake View Crib.

Year of much unemployment. Municipal Lodging House crowded early in December. Lodgers required to work on streets. Two additional free lodging houses opened.

Municipal Employment Agency established.

Workmen's Compensation Act in effect July 1.

The Commissioner of Health read a paper before the American Public Health Association reporting on the favorable results obtained by the experimental employment of the hypochlorite treatment of a portion of Chicago's water supply.

Journal of the American Medical Association started publishing Annual Reports on the Prevalence of Typhoid in Large Cities of the United States. Chicago's rate of 7.5 per 100,000 for previous year (1912) is given as the second lowest typhoid rate of any city in the United States with a population of 500,000 or over.

Health Department appropriation, exclusive of garbage disposal and public improvements, \$626,261.00. Number of employees, 557.

1914: April 13. Dr. C. St. Clair Drake of the Chicago Department of Health appointed secretary of the State Board of Health.

Mr. E. R. Pritchard succeeded Dr. Drake as editor of the Bulletin of the Chicago Department of Health.

Ordinance passed prohibiting dumping in the lake within ten miles from corporate limits (13 miles from shore).

Ordinance passed licensing and controlling meat food products establishments.

Ordinance passed prohibiting dumping on private property without a permit from the commissioner of health.

February. *Garbage reduction plant* of the Chicago Reduction Company, located at 39th and Iron Streets, *purchased by the city* at a price of \$279,689.00. Operation of plant started June 15, 1914. In the meantime the plant was partly rehabilitated and reconstructed. For

nearly two years, pending the completion of the degreasing plant, the dried garbage was sold to a contractor.

Illinois Supreme Court upheld city ordinance controlling pasteurization.

Department of Public Welfare established.

Home relief work by the Municipal Tuberculosis Sanitarium dispensaries inaugurated.

April 1. *Construction of new Municipal Contagious Disease Hospital started.* Ward buildings were planned on the cubicle system and so arranged that visitors can enter and see the patients from the visitors' aisle which is separated from the wards by a glass partition. Hospital located at California Boulevard and 31st Street.

Prosecutions and suit records placed in charge of suit clerk in commissioner's office of Health Department.

Division of child hygiene established in the Department of Health. Fifty additional health officers provided.

Section for the control of typhoid established under the direction of Dr. H. N. Bundesen, who was also charged with the sanitary supervision of the city water supply and the control of chlorination.

Health Department investigated by efficiency staff of Civil Service Commission at request of Commissioner of Health. Report issued April 19, 1915.

June 9. Report made by the Waste Commission, and the recommendations made adopted in principle by the city council.

First year in which the cases of pneumonia reported exceeded the number of deaths from the disease.

Local outbreak of typhoid fever in the Chicago Avenue water supply district.

North Shore Sanitary District organized.

Health Department takes over *dental service in the public schools.*

Field platers first sent to pasteurizing establishments to make bacteriologic examinations of the raw milk and the pasteurized products.

Health Department started distribution of silver nitrate solution for the prevention of blindness.

Widespread outbreak of foot and mouth disease, starting October 15, at Niles, Michigan. The disease recurred in various localities during the following two years.

November. Foot and mouth disease at the Union Stock Yards. Cattle at dairy show, then in progress, infected and quarantined. Stock yards closed, renovated and disinfected.

Sixty-eight cases of typhoid fever traced to milk infection.

Construction begun on a garbage incinerating plant at 95th Street and Stony Island Avenue.

Rufus F. Dawes Hotel, to provide lodgings for unemployed men established.

City Morals Commission created.

Salary of health commissioner raised from \$8,000 to \$10,000.

1915: *Dr. John Dill Robertson appointed commissioner of health, April 27.*

March 9. Municipal Tuberculosis Sanitarium opened.

Consulting staff appointed at the Municipal Tuberculosis Sanitarium.

State Board of Health quarantine regulations superseded those of Chicago Department of Health. The modified form of quarantine, enforced by the Chicago Health Department, abolished thereby.

Ordinance passed requiring foods to be covered.

Following the Eastland Disaster on July 24 the Health Department took immediate steps to have persons immersed in the river immunized against typhoid. Health Department nurses assisted in relief work.

Board hearings, preliminary to starting suit for violations of sanitary ordinances, instituted by the Health Department.

Treatment of water supply with liquid chlorine started, first at the Chicago Avenue Pumping Station on September 16, and next at the 22nd Street Pumping Station on December 15.

Sanitary inspectors of Health Department detailed to police precincts to work in conjunction with patrolmen to maintain sanitary conditions in their respective districts.

Much progress made in the ventilation of theaters. Nearly all of them equipped with proper ventilation installations.

Dairy inspectors began to use automobiles for country inspection work.

Much acetyl salicylic acid sold in drug stores found to be adulterated.

October 4. Mayor William Hale Thompson enforced state law *requiring saloons to be closed on Sunday.*

Two food-borne outbreaks of typhoid in February to April, one from milk and the other from a cook who was a "carrier."

Municipal wood-yard established in connection with the Municipal Lodging House.

Garbage incinerator completed at the House of Correction. Capacity, 50 tons per day.

Report on Smoke Abatement and Electrification of Railway Terminals issued by a committee of the Chicago Association of Commerce.

Model Bill passed by the legislature providing for the registration of births and deaths.

Chicago Institute of Medicine organized. Dr. W. E. Quine, first president.

Typhoid death rate, 5.4 per 100,000. This was the second lowest death rate from the disease recorded in any city of the United States this year having a population of 500,000 or over.

Second lowest scarlet fever death rate on record, 3.1 per 100,000.

Lowest death rate on record of children under one year of age; rate, 2.53 per 10,000 of population.

No deaths from smallpox during the year.

Lowest whooping cough death rate on record, 2.4 per 100,000.

1916: January 1. New Birth and Death State Registration law went into effect. Health Department *resumed the registration of births*. Since 1908 they had been registered with the county clerk.

The Department of Public Works again given jurisdiction over waste disposal.

Fifty Municipal Tuberculosis Sanitarium doctors and 50 nurses placed in public schools.

House to house *survey for tuberculosis* started by the Municipal Tuberculosis Sanitarium in the district between 22nd Street and North Avenue, extending from the lake to Ashland Avenue, comprising eight square miles and having a population of 371,259. Total persons examined 165,700, of which 8.64 per cent. were found to be tuberculous.

Capacity of Municipal Tuberculosis Sanitarium increased to 1000 beds.

Bonds heretofore required to be given by the applicants for various licenses eliminated.

January 26. A local outbreak of typhoid fever in 68th Street water supply district, following discharge of sewage into the pumping wells as a result of an overflowing of the South Side intercepting sewer during a heavy rainfall. A total of 105 cases developed, of which eight died.

Illinois Society for the Prevention of Blindness organized.

Outbreak of infantile paralysis started on July 14, six weeks after the outbreak of the disease in New York City. Outbreak lasted to November 10, resulting in 254 cases and 34 deaths. System of train inspection inaugurated immediately after the New York outbreak. Policy adopted by Health Department of hospitalizing all cases of infantile paralysis. All contacts watched.

July 22. *All milk and cream, except certified, required to be pasteurized*. This order has not been rescinded and since the order has been in effect there have been no milk-borne outbreaks of typhoid fever.

Research Commission on Infantile Paralysis appointed in August.

Gardening movement inaugurated resulting in the planting of a total of 200,000 backyard and vacant lot gardens the next year.

Doctors Mathers, Herzog and Nuzum isolated a pleomorphic coccus from cases of infantile paralysis at Cook County Hospital, producing a flaccid paralysis in monkey, rabbit and young dogs when inoculated.

Doctor's certificate required from school children for readmission to schools after the summer vacation.

Visiting Nurse Association assumed supervision over the after-treatment of cases of infantile paralysis.

Clean Living Magazine published by the Health Department, continued until March, 1917. This was made possible by a donation from a leading business man. Dr. A. M. Corwin, editor.

Diet Squad experiment, conducted by the Health Department, demonstrated the possibility of furnishing a daily bill of fare at 31 cents per capita per day.

Liquid chlorine treatment extended to the entire water supply with the completion of the installation at the Springfield Avenue Station on October 6.

Intensive study made by the Health Department of the physical condition of school children. 191,225 physical examinations made from 1914 to 1916. Results of 138,057 examinations tabulated and cross-tabulated.

Ordinance passed requiring workmen's toilets to be installed in buildings under construction.

Investigation made of the sanitary condition of 289 laundries, and an ordinance regulating laundries drafted and recommended for passage.

Health Department requests restaurant owners to have all employees examined for communicable diseases.

Outbreak of typhoid fever in a high school, probably from salad served in a restaurant.

Two public comfort stations opened in Chicago Public Library Building.

Mean temperature for July and August highest on record since 1871. Last five days of July temperature continuously above 82. Greatest record of sunshine in July, 95 per cent.; 24 days with 100 per cent.

No deaths from smallpox during the year.

Health Department appropriation, \$959,883.00 Total number of employees 802.

1917: January 8. *New Municipal Contagious Disease Hospital opened.* Administration and one ward building completed.

State Department of Health organized July 1. Dr. C. St. Clair Drake, Director of Public Health.

State Department of Registration and Education organized, and given charge of the registration of physicians, nurses, midwives, etc.

Full-time dispensary plan instituted in Municipal Tuberculosis Sanitarium dispensaries. Quarantine system inaugurated for tuberculosis patients. No open cases of tuberculosis permitted in contact with children in the home. Non-cooperating cases placarded and hospitalized.

Association for the Prevention of Infantile Paralysis organized.

High death rate from pneumonia occurred in the spring of this year.

Bond issue of \$150,000 approved by referendum vote providing for the construction of comfort stations.

June 29. Ordinance passed requiring the reporting and treatment of venereal diseases.

Another outbreak of infantile paralysis occurred beginning July 21 and lasting to December 1. Resulted in 527 cases and 177 deaths.

Ordinance passed *controlling day nurseries* and requiring permits.

March 17. Old Contagious Disease Hospital closed.

Free lunches in saloons prohibited by ordinance.

Ordinance passed licensing and controlling "homes" and defining such institutions as separate from hospitals.

Ordinance passed prohibiting accumulations of dust and rubbish on roofs.

Ordinance passed requiring residences to be screened against flies; also an ordinance requiring stables and barns to be screened.

November. Laboratory started making *tests for types of pneumococci*, and began the distribution of anti-pneumococcus serum.

December. Pneumonia cases required to be placarded.

Filling in of Bubbly Creek west of Ashland Avenue started.

Tuberculosis survey made by the Municipal Tuberculosis Sanitarium extended to include the territory south of 55th Street, from Wentworth Avenue to the lake.

An intensive housing survey made by the Municipal Tuberculosis Sanitarium in a portion of the territory covered by the tuberculosis survey previously made.

The Municipal Tuberculosis Sanitarium began the publication of a monthly bulletin.

State law passed providing for the licensing and control of egg-breaking establishments.

Five-year contract made for the removal and disposal of dead animals at the rate of \$5,025 per annum. During the previous 20 years the city had only received \$25.00 per annum for this concession.

Monthly meetings of *Chicago Public Health Association*, under auspices of Health Department and Board of Education, started in the public schools.

Ordinance passed making it *unlawful to allow the growth of weeds* on vacant lots.

Immunization against diphtheria with von Behring's toxin-anti-toxin mixture inaugurated by Health Department in public schools and institutions.

Building operations decreased very greatly on account of the European war. This was even more marked in 1918 when only 1,853 permits were issued, as compared with 12,437 in 1916.

All street cars equipped with proper ventilating devices.

On account of the high price of milk the Municipal Tuberculosis Sanitarium opened a milk station in connection with the dispensary at Sedgwick and Schiller Streets.

Health Department recommended consolidation of milk delivery and presented an ordinance to the city council providing for such consolidation.

Federal Food Administrator for the State of Illinois appointed a *Milk Commission to fix the price of milk* in the Chicago dairy district. The Health Commissioner represented the people at the hearing and made a fight for a reduction in the price and advocated the establishment of a price of two cents less, on the cash and carry basis, which was granted by the Commission. As a result milk was sold on this basis at 10 cents a quart in 560 stores and milk depots.

Municipal Lodging House transferred to the Department of Public Welfare.

Mary Dawes Hotel established to provide lodgings for women at a minimum cost.

Health Department building bonds, in an amount of \$750,000. approved by a referendum vote, making a total of \$2,100,000 in four issues since April, 1912.

Typhoid fever death rate, 1.7 per 100,000 of population. This established the *record of Chicago's having the lowest typhoid rate* of any city in the United States with a population of 100,000 or over.

Second lowest tuberculosis death rate on record; 149 per 100,000.

Diphtheria very prevalent, especially in October and November; 10,290 cases; 1,216 deaths during the year.

High scarlet fever morbidity,—13,444 cases.

1918: Field forces of Health Department reduced approximately 15.5 per cent. on account of the refrenchment in expenditures made necessary by the reduction of the municipal revenue and increased cost of all commodities during the war.

One hundred thirty-one Health Department employes enrolled in the military service of the United States during the war.

Unusually heavy snowfall during January, 42.5 inches during the month.

Special efforts made to vaccinate in order to prevent an outbreak of smallpox. 266 cases during the year; 292 in 1917.

Field work of Municipal Tuberculosis Sanitarium and Health Department co-ordinated with the appointment of a director of field quarantine to supervise the tuberculosis control work of both forces.

Municipal Venereal Disease Clinic started at the Iroquois Memorial Hospital.

Prostitutes examined for venereal diseases and *Lavondale Hospital* opened June 1, for their detention. 7,235 cases of venereal disease reported.

Health Department started to disinfect after deaths from pneumonia and after removal from the premises of persons afflicted with the disease.

Widening of 12th Street completed, and widening of Michigan Boulevard begun.

Three municipal bath houses opened, making a total of 20 free baths maintained by the city.

First municipal laundry established.

Vocational training schools established at the Municipal Tuberculosis Sanitarium.

Wilson Avenue Crib, Northwest Land Tunnel and Mayfair Pumping Station completed. Lake View intake discontinued and pumping station supplied from Wilson Avenue Crib.

September 16. Influenza made a reportable disease.

September 21. *Pandemic of influenza reached Chicago*; attained its maximum on October 17, on which day 381 deaths from pneumonia and influenza occurred. Following this it declined until the death rate from all causes practically fell to normal again during the week ending November 23. The total number of deaths from influenza and pneumonia during the eight weeks of the outbreak was 8,510. The total excess death rate during the 25 weeks following September 8 was 3.8 per 1,000, which is the second lowest increase in mortality recorded for any city in the United States with a population of 500,000.

Illinois Influenza Commission appointed under auspices of the Council of National Defense.

October 15. Theaters, skating rinks, night schools and lodge halls closed.

October 13. *Order issued prohibiting smoking in street cars.* This order has not been rescinded.

October 12. Public funerals prohibited.

October 22. Began issuing influenza vaccine; 313,028 doses issued to January 1, 1919.

October 30. Ban on closing lifted.

Health Department made a scientific exhibit at meeting of the American Public Health Association in Chicago, and also presented a report on the recent outbreak of influenza.

Dr. G. Koehler presented a paper before the Food and Drugs section of the Association, advocating the economic control of food supplies, and instruction in dietetics, as necessary public health measures.

Four hundred ninety-two cases of infantile paralysis, occurring in 1916 and 1917, were revisited by the Health Department and the results of the after-treatment found to be very satisfactory.

Lowest typhoid fever death rate in the city on record, 1.4 per 100,000. This rate was lower than that of any city in the United States, with a population of 100,000 or over.

Lowest tuberculosis death rate on record; rate 147 per 100,000.

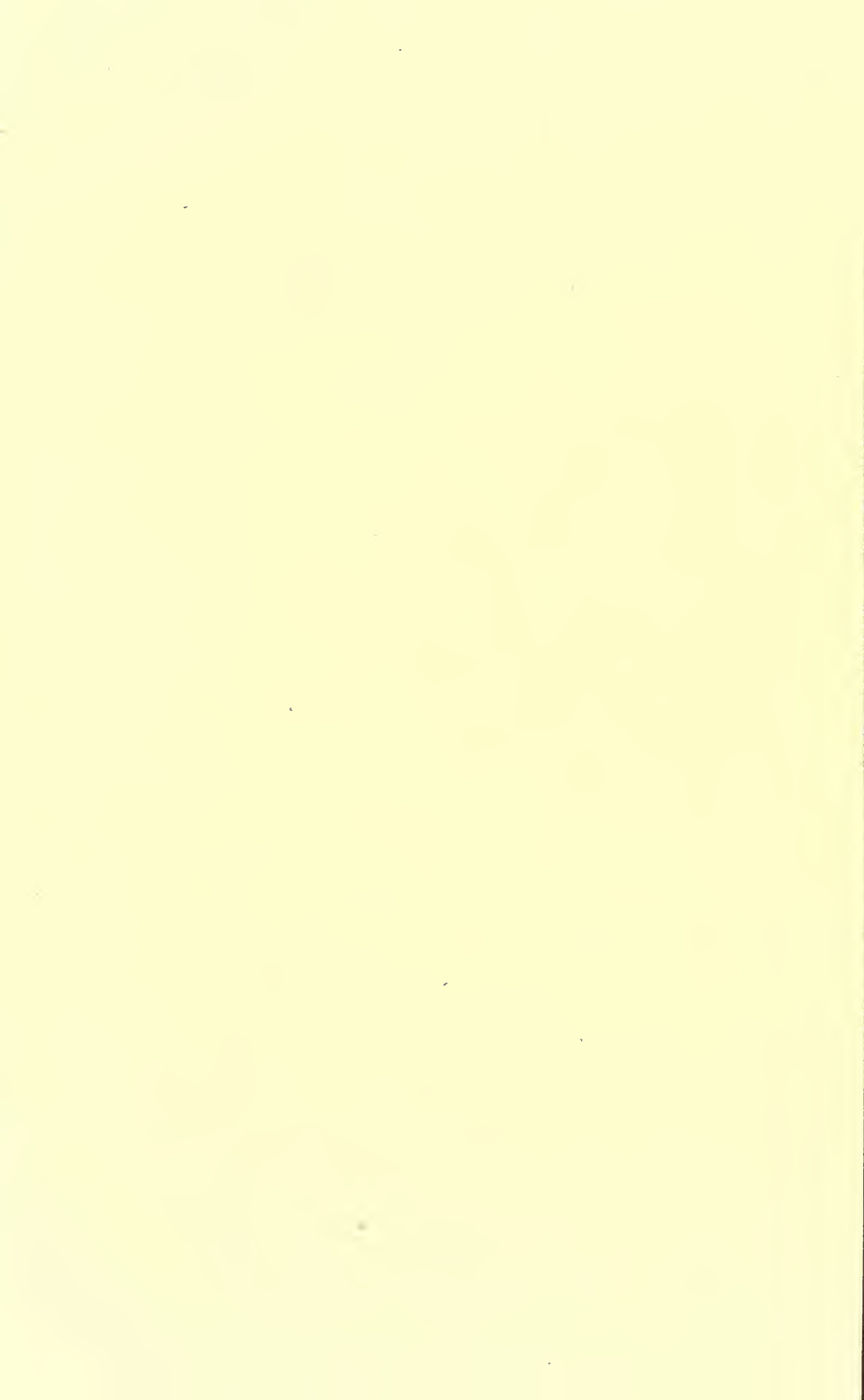
As a result of the influenza epidemic the pneumonia death rate in the city during the year was 26.96 per 10,000.

Lowest scarlet fever morbidity and mortality rates recorded for the city, death rate being 1.8 per 100,000.

Lowest death rate from measles on record; rate 2.4 per 100,000.

Associated Catholic Charities established.

Health Department appropriation, \$1,167,818.85. Total number of employees, 786.



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